Naval Facilities Engineering Command, Southwest
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190

CONTRACT NO. N68711-04-D-1104
CTO NO. 0003

FINAL

GROUNDWATER SAMPLING REPORT AND REQUEST FOR CLOSURE UST SITE 1106

Revision 0
November 30, 2005

MARINE CORPS BASE
CAMP PENDLETON, CALIFORNIA

DCN: SES-TECH-06-0005

Prepared by:

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ABBREVIATIONS AND ACRONYMS

µg/L	micrograms per liter
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
DEH	Department of Environmental Health
EPA	U.S. Environmental Protection Agency
ft/ft	feet per foot
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MCB	Marine Corps Base
mg/L	milligrams per liter
MS/MSD	matrix spike/matrix spike duplicate
MTBE	methyl tert-butyl ether
PAH	polynuclear aromatic hydrocarbon
PCE	tetrachloroethylene
QC	quality control
RPD	relative percent difference
SES-TECH	Sealaska Environmental Services LLC and Tetra Tech EC, Inc.
TPH-d	total petroleum hydrocarbons quantified as diesel
TtEC	Tetra Tech EC, Inc.
UST	Underground Storage Tank
VOC	volatile organic compound
WB	California Water Board

1.0 INTRODUCTION

This Groundwater Sampling Report, prepared by SES-TECH, a joint venture between Sealaska Environmental Services LLC and Tetra Tech EC, Inc. (TtEC), presents the results of groundwater sampling completed in September 2005 at Underground Storage Tank (UST) Site 1106, Marine Corps Base (MCB) Camp Pendleton, California (Figure 1-1). This groundwater sampling event was conducted in response to a request from the California Water Board (WB) in a letter dated October 1, 2004 (reference SMC:50-3062.05:grifb) to conduct at a minimum one additional round of groundwater sampling at the site. In the October letter, the WB also requested other environmental concerns at the site be addressed. This report presents the results of the additional groundwater sampling event, addresses the other WB concerns, and requests site closure. The groundwater monitoring and associated reporting activities were performed under Contract No. N68711-04-D-1104, Contract Task Order No. 0003, for the U.S. Department of the Navy, Naval Facilities Engineering Command, Southwest.

SCOPE OF WORK

Groundwater sampling at UST Site 1106 included measuring water levels and collecting groundwater samples for analysis. During the September 2005 groundwater event, all wells were sampled using low-flow sampling techniques, and pursuant to the WB's request, the samples were analyzed for total petroleum hydrocarbons quantified as diesel (TPH-d); volatile organic compounds (VOCs), including benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tert-butyl ether (MTBE), and other oxygenates (such as di-isopropyl ether, ethyl tert-butyl ether, tert-amyl methyl ether, and tert-butyl alcohol); and polynuclear aromatic hydrocarbons (PAHs).

1.2 SITE IDENTIFICATION

Site identification data:

Site Address:	Building 1106, Camp Pendleton, California 92055
Facility Name:	Marine Corps Exchange
Department of Environmental Health (DEH) Case No.:	H05939-210, H05939-196
WB Case No.:	9UT3062
Property Owner:	United States Marine Corps
Contact Person:	Mr. Chet Storrs, Remediation Branch Manager Assistant Chief of Staff, Environmental Security Box 555008, Building 22165 Camp Pendleton, California 92055-5008 (760) 725-9774
Remedial Project Manager:	Mr. Bipin Patel, P.E. Naval Facilities Engineering Command, Southwest 1220 Pacific Highway San Diego, California 92132-5190 (619) 532-4814
Responsible Party:	United States Marine Corps

2.0 GROUNDWATER SAMPLING

The following sections summarize the September 2005 groundwater sampling activities conducted at UST Site 1106.

WATER LEVEL MEASUREMENTS

Prior to groundwater sampling, the depth to water and the total depth of each well were measured and recorded on a well sampling log (Appendix A). The depths were measured from the top of the casing at each well. The well casing elevations could not be located, so a new well elevation survey was completed by a California-certified surveyor. The results of the new well elevation survey, plus the September 2005 water elevation data, are included on Table 2-1.

SAMPLING METHODOLOGY

On September 7, 2005, all monitoring wells (MW1, MW2, and MW3) were sampled using low-flow sampling methodology.

Before sampling, a bladder pump was slowly lowered into each well and positioned near the center of the screen interval. In addition, a water-level indicator was placed at the water surface to monitor water-level drawdown during purging. While purging at the lowest operational setting of the pump, which was approximately 70 to 100 milliliters per minute, the water level surface began to drop and exceeded the minimum drawdown requirement of 0.33 feet at wells MW1 and MW3. The drop in water level is likely attributed to low transmissivity of the aquifer materials.

Because a stabilized water level could not be achieved, even at very low pumping rates, a passive, or minimum, purge sampling method was performed following the methodology presented in a U.S. Environmental Protection Agency (EPA) Groundwater Issue paper titled *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (Puls and Barcelona, 1996). The passive/minimal purge approach requires the removal of a minimum of three volumes of the sampling system from each well. The liquid volume of the sampling system consists of the volume of the pump's bladder, discharge tubing and flow-through cell attached to the water quality meter. After purging the required volume at the lowest flow rate achievable for each well, a groundwater sample was collected. To monitor groundwater conditions during purging, water-quality parameters were measured as follows: temperature, pH, electrical conductivity, turbidity, dissolved oxygen, and oxygen/reduction potential. These measurements were recorded on the well sampling logs provided in Appendix A. All non-disposable downhole equipment, such as the bladder pump and water-level indicator, were decontaminated between wells.

Groundwater samples were collected through new dedicated polyethylene discharge tubing, which was connected to the bladder pump. Each sample was collected in the appropriate

containers, labeled, and placed in a cooler with ice immediately after sample collection for delivery to the analytical laboratory.

SAMPLE ANALYSES

Groundwater samples were sent to EMAX Laboratories on the day they were collected for analysis of TPH-d using EPA Method 8015B, VOCs by EPA Method 8260B, and PAHs by EPA Method 8270C.

WASTE MANAGEMENT

All equipment decontamination water and groundwater generated from well purging were temporarily contained in a polyethylene tank at the site and later transferred to a liquid storage tank located at the project trailer (21 Area, MCB Camp Pendleton). The tank was closed, marked, labeled, and located to minimize traffic hazards and discourage tampering. The wastewater was transported off site for disposal at a waste-permitted facility. The handling, management, transportation, and disposal of wastewater were conducted in accordance with state and federal laws and regulations. No wastes were stored at the site for more than 60 days. A copy of the waste manifest is provided in Appendix B.

3.0 GROUNDWATER MONITORING RESULTS

Groundwater flow and analytical results from the September 2005 sampling event are discussed in the following subsections.

GROUNDWATER FLOW DIRECTION

The groundwater elevations measured in September 2005 are presented in Table 2-1 and contoured on Figure 3-1. As shown on Table 2-1, the depth to groundwater at the site was approximately 7 feet below the ground surface (bgs). Based on the water elevations measured in September 2005, groundwater flows toward the northwest with an approximate gradient of 0.02 feet per foot (ft/ft) (Figure 3-1).

ANALYTICAL RESULTS

A total of six samples (including a field duplicate, a trip blank, and an equipment rinsate sample) were collected during the September 2005 event and sent to EMAX Laboratories, Inc., for analysis. The analytical results were successfully uploaded to the WB Geotracker database (Confirmation No. 4847503840). A summary of the groundwater sampling results is presented in Table 3-1.

TPH-d was detected in both MW1 (located adjacent to the former tank cavity) and MW2 (located approximately 20 feet downgradient of the former tank cavity) at a concentration of 0.15 milligrams per liter (mg/L). TPH-d was not detected MW3.

The only VOCs detected in groundwater include tetrachloroethene (PCE) and chloroform. PCE was detected in MW1 and MW2 at estimated concentrations (between the method detection limit and reporting limit) of 2.5 micrograms per liter (µg/L) and 2.7 µg/L, respectively. Chloroform was also reported in MW1 and MW2 at estimated concentrations of 0.26 µg/L and 0.30 µg/L, respectively.

No BTEX, MTBE, or PAHs were detected in any of the wells.

A copy of the analytical laboratory report and chain-of-custody form is provided in Appendix C.

4.0 QUALITY ASSURANCE AND QUALITY CONTROL

This section summarizes the quality assurance and quality control (QC) results for the September 2005 groundwater monitoring event.

All groundwater samples were collected and preserved in accordance with the *San Diego County DEH Site Assessment and Mitigation Manual 2005* (DEH, 2005), and were delivered to the analytical laboratory within 24 hours of sample collection by a laboratory courier and analyzed within the method-specified analytical holding times. EMAX Laboratories, Inc., a state of California-certified and Naval Facility Engineering Service Center-evaluated laboratory, performed sample analyses.

One field duplicate sample pair (identified as 0003-64 and 0003-65) was collected from monitoring well MW2. The relative percent difference (RPD) between the detected constituents (TPH-d, chloroform, and PCE) was 0, 7, and 4 percent, respectively.

To assess potential cross-contamination of VOCs during sample transport, one set of trip blank samples (identified as 0003-61) was sent along with groundwater samples to the laboratory and analyzed for VOCs. In addition, one equipment rinsate sample was collected (identified as 0003-62) to assess potential cross-contamination of VOCs, TPH-d, and PAHs from equipment used for sampling. Detectable levels of target analytes were not reported above half the project reporting limits in either the trip blank or the equipment rinsate sample indicating the effectiveness of the sample transportation and decontamination procedures during this sampling event.

In accordance with the analytical method specifications, method blanks, surrogate spikes, laboratory control samples (LCSs), and LCS duplicates (LCSDs) were analyzed to assess method accuracy and precision. A set of matrix spike (MS) and matrix spike duplicate (MSD) samples (0003-63) was also provided to the laboratory for all analyses during this sampling event.

No detectable levels of target analytes were found in the method blanks during this event. Percent recoveries in LCS, LCSD, MS, MSD, and surrogates and RPDs between the spiked duplicates were well within the project-specified QC acceptance limits.

A third-party validation company, Laboratory Data Consultants, Inc., located in Carlsbad, California, performed EPA Level III and IV validation of analytical data. For this sampling event, one sample was validated according to the EPA Level IV protocol, and five samples (including field QC samples) were validated according to the EPA Level III protocol. The validation reported that all of the applicable validation criteria were met for all samples with one minor exception. One PAH [indeno(1,2,3-cd)pyrene] exceeded the upper control limit for a continuing calibration verification analysis. However, since this analyte was not detected in any of the samples, data are not impacted.

5.0 SUMMARY AND REQUEST FOR CLOSURE

After reviewing a closure report prepared for Site 1106 by OHM Remediation Services, Inc. in 1995, the WB requested (in a letter dated October 1, 2004, reference SMC:50-3062.05:grifb) that three issues be addressed. The issues included: 1) the only groundwater sampling event completed at the site was completed in 1994 and did not include analyses for MTBE, PAHs, and chlorinated solvents; 2) the presence of BTEX in MW3, which was shown in the closure report to be located 40 feet cross-gradient from the UST; and 3) the reported concentrations of TPH-d in two samples collected from a stockpile of excavated soils were significantly higher than the TPH-d reported in a soil sample collected from the area before the excavation began, suggesting that additional soil contamination may remain on site and be a potential long-term source of groundwater contamination. Each of these issues are addressed below.

To address the first issue, an additional groundwater sampling event was completed (described in this report) and samples were analyzed for TPH-d, VOCs (including chlorinated solvents and MTBE), and PAHs. Results indicated that only a relatively low level of TPH-d (1.5 mg/L), estimated concentrations of PCE (up to 2.7 μg/L), and estimated concentrations of chloroform (up to 0.30 μg/L), are present adjacent to, and approximately 20 feet downgradient of, the former tank cavity (Figure 3-1).

The second WB concern included the presence of BTEX in 1994 in MW3, reported in the closure report to be located approximately 40 feet cross-gradient of the former tank cavity. Based on the results from the most recent sampling completed in September 2005, BTEX is not present in any of the wells, including MW3, and MW3 is located downgradient of the former tank cavity (Figure 3-1). Therefore, it appears the conditions that were reported in 1994 are no longer present at the site.

The third WB concern included the presence of TPH-d in two soil samples collected from a stockpile of excavated soils that was significantly higher than the TPH-d reported in a soil sample collected from the same area before the excavation began. This suggested that additional soil contamination could be present on site and be a potential long-term source of groundwater contamination. However, because the current groundwater sampling results (September 2005) indicated that groundwater contamination is relatively low (TPH-d at 1.5 mg/L, PCE at 2.7 μg/L, and chloroform at 0.30 μg/L), and the groundwater plume has appeared to have decreased in size since 1994 (contaminants are no longer detected in well MW3), it appears that there is not a significant, if any, contaminant source remaining in the soil that is impacting groundwater.

Therefore, based on the relatively low levels of contaminants in groundwater, and the shrinking nature of the plume, site closure with no further action is again requested for UST Site 1106.

6.0 REFERENCES

Puls, R., and M.J. Barcelona. 1996. *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures.* April.

San Diego County Department of Environmental Health, Land and Water Quality Division (DEH). 2005. *San Diego County Site Assessment and Mitigation Manual 2005*.

TABLES

TABLE 2-1

SUMMARY OF SEPTEMBER 2005 WATER LEVEL ELEVATIONS
UST SITE 1106, MCB CAMP PENDLETON, CALIFORNIA

Monitoring Well ID	Reference Point (toc) Elevation (feet amsl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet amsl)
MW1	369.95	6-Sep-05	6.99	362.96
MW2	369.32	6-Sep-05	7.23	362.09
MW3	368.25	6-Sep-05	7.58	360.67

Notes:

amsl- above mean sea level
btoc- below top of casing
MCB- Marine Corps Base
toc- top of casing
UST- Underground Storage Tank

TABLE 3-1

SUMMARY OF SEPTEMBER 2005 GROUNDWATER SAMPLING RESULTS
UST SITE 1106, MCB CAMP PENDLETON, CALIFORNIA

Well ID	Date Sampled	Sample ID	TPH-d	VOCs							PAHs
				Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE	Tetrachloroethene	Chloroform	
			mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Water Quality Objectives			0.1	1	150	680	1750	13[(1)]	5	100	various
MW1	7-Sep-05	0003-66	**0.15**	--	--	--	--	--	2.5J	0.26J	--
MW2	7-Sep-05	0003-64	**0.15**	--	--	--	--	--	2.6J	0.28J	--
	7-Sep-05	0003-65 (Dup)	**0.15**	--	--	--	--	--	2.7J	0.3J	--
MW3	7-Sep-05	0003-63	--	--	--	--	--	--	--	--	--

Notes:

Bold values exceed listed water quality objective

(1) - California Department of Health Service proposed primary Maximum Contaminant Level

-- - not detected

µg/L - micrograms per liter

Dup - field duplicate sample

J - estimated value that falls between the laboratory method detection limit and project reporting limit

MCB - Marine Corps Base

mg/L - milligrams per liter

MTBE - methyl tert-butyl ether

PAH - polynuclear aromatic hydrocarbon

TPH-d - total petroleum hydrocarbons quantified as diesel

UST- Underground Storage Tank

VOCs - volatile organic compounds

FIGURES

DRAWN BY: MD	CHECKED BY: AK	APPROVED BY: MC	DCN: SES-TECH-06-0005	DRAWING NO: 06000511.DWG
DATE: 11/03/05	REV: REVISION 0		CTO: #003	

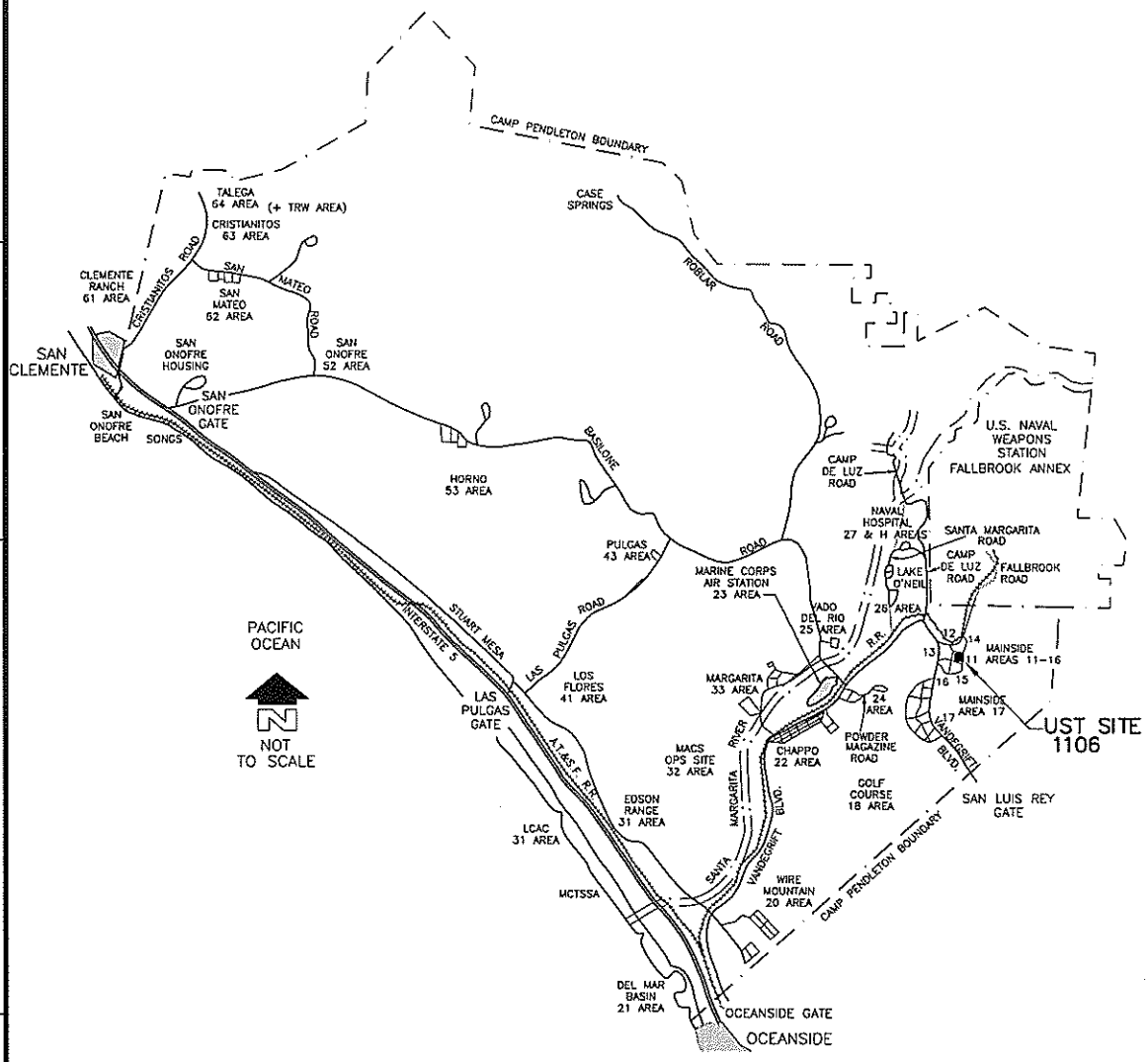
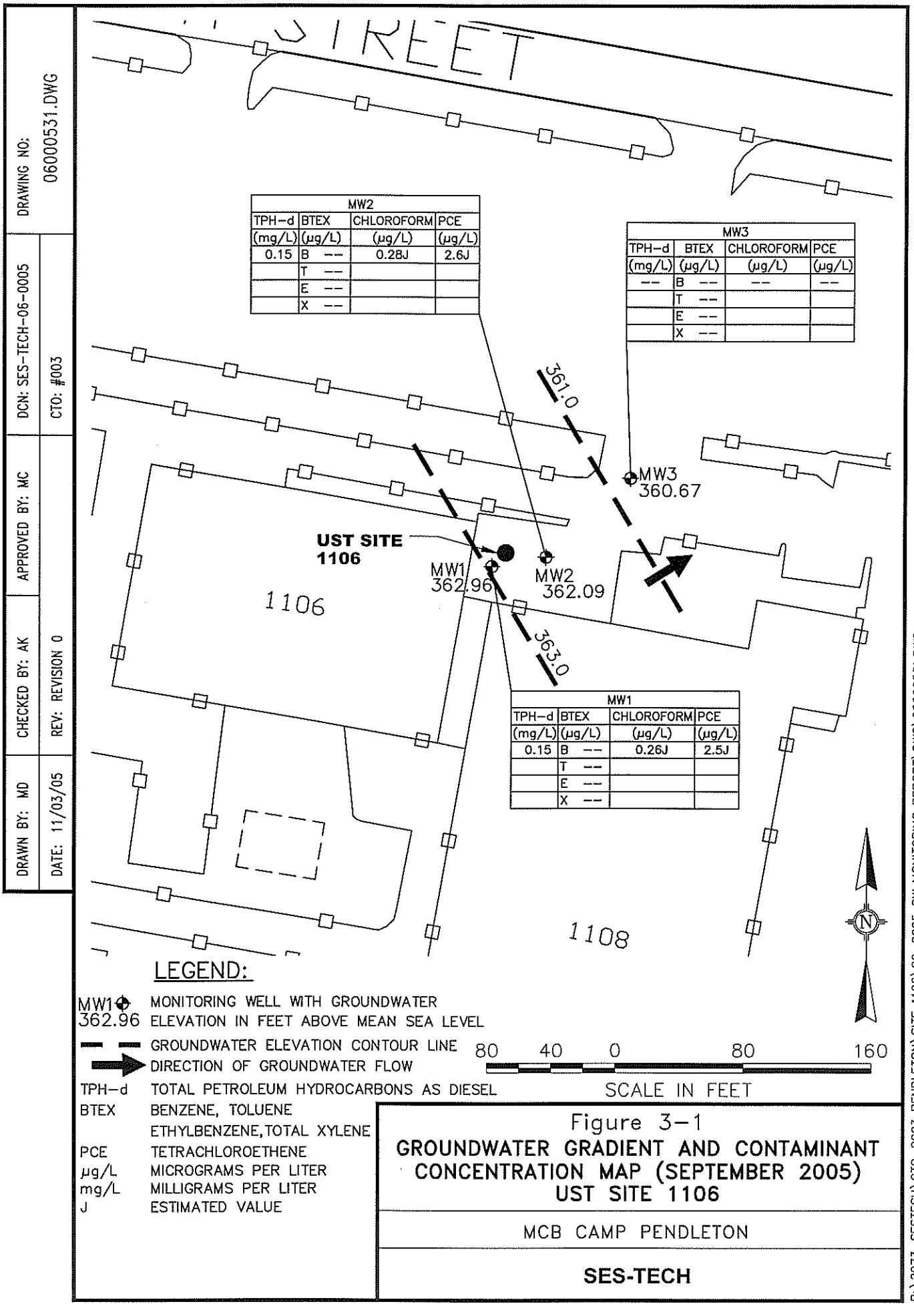


Figure 1-1
SITE LOCATION MAP

MCB CAMP PENDLETON

SES-TECH

P:\2973-SESTECH\CTO-0003 PENDLETON\SITE 1106\06-0005 GW MONITORING REPORT\DWG\06000511.DWG
PLOT/UPDATE: NOV 03 2005 09:12:00



DRAWING NO: 06000531.DWG
DCN: SES-TECH-06-0005
CTO: #003
APPROVED BY: MC
CHECKED BY: AK
REV: REVISION 0
DRAWN BY: MD
DATE: 11/03/05

Figure 3-1
GROUNDWATER GRADIENT AND CONTAMINANT CONCENTRATION MAP (SEPTEMBER 2005)
UST SITE 1106

MCB CAMP PENDLETON

SES-TECH

P:\2973-SESTECH\CTO-0003 PENDLETON\SITE 1106\06--0005 GW MONITORING REPORT\DWG\06000531.DWG
PLOT/UPDATE: NOV 09 2005 12:47:06

APPENDIX A

WELL SAMPLING LOGS

SES-TECH

Field Water Level Measurements

Date: 9/6/05
Personnel: M Pang
W. Bryant
Weather: Sunny & Warm

Project Name: 2973-0030
Project OFS: 1106
Measurement Device: Solinst
Comments:

Well I.D.	Depth to Water from Measuring Point (feet)	Depth to Sediment from Measuring Point (feet)	Comments
MW3	7.58	33.15	
MW2	7.23	32.91	Vault flooded
MW1	6.99	27.55	

F:\forms\logs\water level

LOW-FLOW PURGING AND SAMPLING DATA SHEET

Project Name: MCB Camp Pendleton
Project Number: UST 1106
Date: 9/6/05
Site Engineer(s): W. Bryant, M. Parra

Well Number: HW-3
Equipment: QED Sample Pro Mini Bladder Pump
Sample ID: Time: 1347
Contractor: Tetra Tech EC, Inc

Reference: Top of Casing	Before	After
Depth to Water (ft)	7.11	
Depth of Well (ft)	33.15	
Depth to Top of Screen		
Screen Length (ft)		
Pump depth (ft)	28 ±	
Pump Rate		
Sample Pump Rate	100	
System Volume	554	

Total Volume Purged (mL):

Notes/Calcs:

System Vol (mL) = (2.4*H)+470
where
2.4mL/ft = tubing volume per foot (1/8"ID)
H = length of tubing in feet
470 mL = Bladder volume + Flowthru cell volume

Time	pH	Conductivity (µmhos)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Cum. Volume (mL)	Comments
1318									Pump on
1322	6.59	18.9	4.33	28.35	81	410	7.20		clear, no odor
1325	6.60	18.9	4.21	28.32	82	407	7.33		clear, no odor
1328	6.60	18.8	3.90	28.30	83	403	7.49		clear, no odor
1331	6.60	18.8	3.73	25.30	84	385	7.56		clear, no odor
1334	6.59	18.9	3.19	28.23	85	372	7.72		" "
1337	6.59	18.9	2.85	28.20	86	400	7.85		" "
1340	6.59	18.8	2.65	28.15	86	406	7.98		" "
1343	6.59	18.9	2.58	28.15	86	402	8.10		" "
1346	6.59	18.8	2.47	28.15	87	415	8.20		" "
1347								Collect	Sample
Stability:	± 0.2 units	± 3-5%	± 0.2 mg/L	± 0.3 %	± 20 mV	± 10%			

Hach Fe^{2+} N/A

Samples were collected directly from pump unless otherwise noted.

LOW-FLOW PURGING AND SAMPLING DATA SHEET

Project Name: MCB Camp Pendleton
Project Number: 25T 1106
Date: 9/9/05
Site Engineer(s): W. Bryant, M. Kaz

Well Number: MW-2
Equipment: QED Sample Pro Mini Bladder Pump
Sample ID: Time: 1515
Contractor: Tetra Tech EC, Inc

Reference: Top of Casing	Before	After
Depth to Water (ft)	7.54	
Depth of Well (ft)	32.91	
Depth to Top of Screen		
Screen Length (ft)		
Pump depth (ft)	28.00	
Pump Rate	100	
Sample Pump Rate	100	
System Volume	554	

Total Volume Purged (mL):

Notes/Calcs:

System Vol (mL) = (2.4*H)+470
where
2.4mL/ft = tubing volume per foot (1/8"ID)
H = length of tubing in feet
470 mL = Bladder volume + Flowthru cell volume

Time	pH	Conductivity (µmhos)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Cum. Volume (mL)	Comments
1445									pump on
1451	6.28	2.50	3.73	29.98	98	684	8.45	600	clear, silt, odor
1454	6.30	2.50	3.30	29.10	100	593	8.46	1200	" "
1457	6.32	2.53	3.22	29.16	100	595	8.46	1800	" "
1500	6.34	2.53	3.10	29.00	103	616	8.47	2400	clear, no odor
1503	6.35	2.57	3.00	28.80	110	680	8.75	3000	clear, no odor
1506	6.36	2.60	2.85	28.50	113	750	8.95	3600	clear, no odor
1509	6.36	2.60	2.80	28.50	116	800	8.77	4200	clear, no odor
1510									Collect Sample
1515									Collect Dup
Stability:	± 0.2 units	± 3-5%	± 0.2 mg/L	± 0.3 %	± 20 mV	± 10%			

9/9/05

Hach Fe^{2+} N/A

Samples were collected directly from pump unless otherwise noted.

LOW-FLOW PURGING AND SAMPLING DATA SHEET

Project Name: MCB Camp Pendleton
Project Number: UST Site 1106
Date: 9/7/05
Site Engineer(s): W. Bryant, M. Pang

Well Number: MW-1
Equipment: QED Sample Pro Mini Bladder Pump
Sample ID: Time: 1616
Contractor: Tetra Tech EC, Inc

Reference: Top of Casing	Before	After
Depth to Water (ft)	6.80	
Depth of Well (ft)		
Depth to Top of Screen		
Screen Length (ft)		
Pump depth (ft)	22≈	
Pump Rate	100	
Sample Pump Rate	100	
System Volume	530	

Total Volume Purged (mL):

Notes/Calcs:

System Vol (mL) = (2.4*H)+470
where
2.4mL/ft = tubing volume per foot (1/8"ID)
H = length of tubing in feet
470 mL = Bladder volume + Flowthru cell volume

Time	pH	Conductivity (µmhos)	Dissolved Oxygen (mg/L)	Temp. (°C)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Cum. Volume (mL)	Comments
1548									Pump on
1554	6.59	2.47	6.18	23.37	162	<1000	7.28	600	SLT cloudy, no odor
1557	6.60	2.41	6.03	23.16	159	<1000	7.26	900	Silty cloudy, no odor
1600	6.63	2.33	5.89	23.29	156	990	7.26	1200	" "
1603	6.64	2.30	5.77	23.35	155	863	7.25	1500	" "
1606	6.66	2.24	5.75	23.35	153	690	7.26	1800	" "
1609	6.67	2.21	5.80	23.25	149	534	7.26	2100	" "
1612	6.68	2.13	5.78	23.28	148	501	7.26	2400	" "
1615	6.69	2.10	5.74	23.31	146	460	7.26	2700	" "
1616								collect	sample
Stability:	± 0.2 units	± 3-5%	± 0.2 mg/L	± 0.3 %	± 20 mV	± 10%			

9/7/05

Hach Fe^{2+} N/A

~~Turbidity not working~~ WB

Samples were collected directly from pump unless otherwise noted.

APPENDIX B

NON-HAZARDOUS WASTE MANIFEST

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. CA 2170023533	Manifest Document No. 54504	2. Page 1 of 1

3. Generator's Name and Mailing Address
ASSISTANT CHIEF OF STAFF
ENVIRONMENTAL SECURITY P.O. BOX 555008
CAMP PENDLETON, CA 92055-5008
4. Generator's Phone (760) 725-0189 ATTN: NATE DELESTON

5. Transporter 1 Company Name	6. US EPA ID Number	A. State Transporter's ID
GENERAL ENVIRONMENTAL MANAGEMENT	CAD983649880	B. Transporter 1 Phone 800-326-1011
7. Transporter 2 Company Name	8. US EPA ID Number	C. State Transporter's ID
		D. Transporter 2 Phone

9. Designated Facility Name and Site Address	10. US EPA ID Number	E. State Facility's ID
DK ENVIRONMENTAL 3650 EAST 26TH STREET VERNON, CA 90023	CAT080033681	F. Facility's Phone 323-268-5056

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON HAZARDOUS LIQUID (WELL WATER)	1	DM	55	G
b. NON HAZARDOUS SOLID (WELL SOIL)	2	DM	1,500	P
c.				
d.				

GENERATOR

G. Additional Descriptions for Materials Listed Above
11a) 1 x 55g - APPROVAL #340901-24
11b) 2 x 55g - APPROVAL # 340901-23

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
EMERGENCY PHONE (800) 326-1011 (G.E.M.)

SWO# 158166

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date Month	Day	Year
NATHANIEL D. DELESTON	[signature]	10	24	05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials		Date		
Printed/Typed Name	Signature	Month	Day	Year
Rudy Negrete	[signature]	10	24	05
18. Transporter 2 Acknowledgement of Receipt of Materials		Date		
Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date Month	Day	Year

APPENDIX C

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORMS

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

NUMBER 12433

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: Camp Pendleton
PURCHASE ORDER NO.:
PROJECT LOCATION: IST Site 1106
PROJECT NO.: 2973-0030
SAMPLER NAME: Wendy Bryant / Tania Turpin / [illegible]
AIRBILL NUMBER: Courier
PROJECT CONTACT: Sevda Aleckson
PROJECT CONTACT PHONE NUMBER: 949-756-7500
LABORATORY NAME: EMAX
LABORATORY ID (FOR LABORATORY): 05I049

ANALYSES REQUIRED: EPA 8260B (VOCs+oxygenates); EPA 8015B (TPHd); EPA 8270C (PAHs)

SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	EPA 8260B (VOCs+oxygenates)	EPA 8015B (TPHd)	EPA 8270C (PAHs)	COMMENTS	LOCATION	DEPTH START	DEPTH END	QC
0003-61	9/7/05	1240	3	X		W	10 Day	X				Trip Blank	\	\	TB
0003-62	9/7/05	1250	5	X		W	10 Day	X	X	X		Equip. Rinsate	\	\	ER
0003-63	9/7/05	1347	15	X		W	10 Day	X	X	X	To include MS/MSD	1106-MW-3	\	\	Reg
0003-64	9/7/05	1510	5		X	W	10 Day	X	X	X		1106-MW-2	\	\	Reg
0003-65	9/7/05	1515	5	X		W	10 Day	X	X	X		1106-MW-2	\	\	Dup
0003-66	9/7/05	1616	5	X		W	10 Day	X	X	X		1106-MW-1	\	\	Reg

GB 9/7/05 (initials on crossed-out blank rows and unused analysis columns)

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	9/8/05	[signature]
COMPANY: TTEC	TIME: 1315	COMPANY: EMAX
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS:

COMPOSITE DESCRIPTION:

SAMPLING COMMENT:

Project Information Section
Do not submit to Laboratory

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)
TEMPERATURE: ____ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN
COOLER SEAL: ☐ INTACT ☐ BROKEN

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

COPY

TABLE OF CONTENTS

CLIENT: **SES-TECH**

PROJECT: **CAMP PENDLETON, UST SITE 1106**

SDG: **05I049**

** - Not Requested

EMAX LABORATORIES, INC. 1835 W. 205th Street, Torrance, CA 90501 Tel: (310) 618-8889 Fax: (310) 618-0818

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 09-26-2005
EMAX Batch No.: 051049

Attn: Sevda Aleckson

SES-TECH
1940 E. Deere Avenue, Suite 200
Santa Ana CA 92705

Subject: Laboratory Report
Project: Camp Pendleton, UST Site 1106

Enclosed is the Laboratory report for samples received on 09/08/05.
The data reported include :

Sample ID	Control #	Col Date	Matrix	Analysis
0003-61	I049-01	09/07/05	WATER	VOLATILE ORGANICS BY GC/MS
0003-62	I049-02	09/07/05	WATER	SEMIVOLATILE ORGANICS SIM TPH DIESEL
0003-63	I049-03	09/07/05	WATER	VOLATILE ORGANICS BY GC/MS SEMIVOLATILE ORGANICS SIM TPH DIESEL
0003-64	I049-04	09/07/05	WATER	VOLATILE ORGANICS BY GC/MS SEMIVOLATILE ORGANICS SIM TPH DIESEL
0003-65	I049-05	09/07/05	WATER	VOLATILE ORGANICS BY GC/MS SEMIVOLATILE ORGANICS SIM TPH DIESEL
0003-66	I049-06	09/07/05	WATER	VOLATILE ORGANICS BY GC/MS SEMIVOLATILE ORGANICS SIM TPH DIESEL
0003-63MS	I049-03M	09/07/05	WATER	VOLATILE ORGANICS BY GC/MS SEMIVOLATILE ORGANICS SIM TPH DIESEL
0003-63MSD	I049-03S	09/07/05	WATER	VOLATILE ORGANICS BY GC/MS SEMIVOLATILE ORGANICS SIM TPH DIESEL VOLATILE ORGANICS BY GC/MS

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Kam Y. Pang, Ph.D.
Laboratory Director

EMAX LABORATORIES

9-8-05

~~05E048~~ 05E049 NUMBER 12433

TETRA TECH
1230 Columbia Street, Suite 500
San Diego, CA 92101 (619) 234-8696

VW04-13/4G

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: Camp Pendleton	PURCHASE ORDER NO:
PROJECT LOCATION: UST Site 1106	PROJECT NO: 2973-0030
SAMPLER NAME: Tania Turpin-Kersell / Wendy Bryant	AIRBILL NUMBER: Courier
PROJECT CONTACT: Sevda Aleckson	PROJECT CONTACT PHONE NUMBER: 949-756-7500

LABORATORY NAME: EMAX

LABORATORY ID (FOR LABORATORY):

ANALYSES REQUIRED: EPA 8260B (VOCs + oxygenates); EPA 8015B (TPH-d); EPA 8270C (PAHs)

	SAMPLE ID	DATE COLLECTED	TIME COLLECTED	NO. OF CONTAINER	LEVEL 3	LEVEL 4	TYPE	TAT	EPA 8260B (VOCs + oxygenates)	EPA 8015B (TPH-d)	EPA 8270C (PAHs)	COMMENTS
1	0003-61	9/7/05	1240	3	X		W	10 Day	X			
2	0003-62	9/7/05	1250	5	X		W	10 Day	X	X	X	
3	0003-63	9/7/05	1347	15	X		W	10 Day	X	X	X	TO include MS/MSD
4	0003-64	9/7/05	1510	5		X	W	10 Day	X	X	X	
5	0003-65	9/7/05	1515	5	X		W	10 Day	X	X	X	
6	0003-66	9/7/05	1616	5	X		W	10 Day	X	X	X	

Cep 9/7/05

RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
[signature]	9/8/05	[signature]
COMPANY: TTEC	TIME: 1315	COMPANY: EMAX
[signature]	9-8-05	[signature]
COMPANY: EMAX	TIME: 1510	COMPANY: EMAX
COMPANY	TIME	COMPANY

LABORATORY INSTRUCTIONS/COMMENTS: T= 3.0°C, T= 3.5°C T= 3.8°C

COMPOSITE DESCRIPTION

SAMPLE CONDITION UPON RECEIPT (FOR LABORATORY)

TEMPERATURE: ______ SAMPLE CONDITION: ☐ INTACT ☐ BROKEN

COOLER SEAL: ☐ INTACT ☐ BROKEN

1001

White - Laboratory; Pink - Laboratory; Canary - Project File; Manila - Data Management

EMAX-SM02
Rev. 3
Appendix 2

SAMPLE RECEIPT FORM 1

Type of Delivery	Delivered By/Airbill		
☑ EMAX Courier		ECN	051049
☐ Client Delivery		Recepient	Chavez
☐ Third Party		Date	4-8-05
		Time	15:10

COC Inspection

☑ Client Name		☑ Sampler Name	☑ Sampling Date/Time/Location
☑ Address		☐ Courier Signature/Date/Time	☑ Analysis Required
☑ Client PM/FC		☑ TAT	☐ Matrix
☑ Tel #/Fax #		☑ Sample ID	☐ Preservative (if any)
Safety Issues	☑ None	☐ High Concentrations expected	☐ Superfund Site Samples
Comments:	☐ Rad Screening Required		

Packaging Inspection

Container	☐ Cooler	☐ Box	☐	☐
Condition	☐ Custody Seal	☑ Intact	☐ Damaged	☐
Packaging	☐ Bubble Pack	☐ Styrofoam	☑ Sufficient	☐
Temperatures	☑ Cooler 1 3.0	☑ Cooler 2 3.5	☑ Cooler 3 3.8	☐ Cooler 4 _____
	☐ Cooler 5 _____	☐ Cooler 6 _____	☐ Cooler 7 _____	☐ Cooler 8 _____
	☐ Cooler 9 _____	☐ Cooler 10 _____	☐ Cooler 11 _____	☐ Cooler 12 _____

Comments:

LSCID	Client ID	Discrepancy	Corrective Action

LSCID : Lab Sample Container ID

REVIEWS

Sample Labeling [signature] Date 9/8/05

SRF _____ Date _____

PM [signature] Date 4/9/05

1002

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

EMA
LABORATORIES

LABORATORY REPORT FOR

SES-TECH

CAMP PENDLETON, UST SITE 1106

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 05I049

2000

CASE NARRATIVE

CLIENT: SES-TECH

PROJECT: CAMP PENDLETON, UST SITE 1106

SDG: 05I049

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Six (6) water samples were received on 09/08/05 for Volatile Organic analysis by Method 5030B/8260B in accordance with USEPA SW846, 3rd ed.

1. **Holding Time**

   Analytical holding time was met.

2. **Tuning and Calibration**

   Tuning and calibration were carried out at 12-hour interval. All QC requirements were met.

3. **Method Blank**

   Method blank was free of contamination at half of the reporting limit.

4. **Surrogate Recovery**

   Recoveries were within QC limit.

5. **Lab Control Sample/Lab Control Sample Duplicate**

   Recoveries were within QC limit.

6. **Matrix Spike/Matrix Spike Duplicate**

   Sample I049-03 was spiked. All recoveries were within QC limit.

7. **Sample Analysis**

   Samples were analyzed according to the prescribed QC procedures. All criteria were met.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : SES-TECH
Project : CAMP PENDLETON, UST SITE 1106

SDG NO. : 051049
Instrument ID : T-005

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V005I24Q	1	NA	09/12/0513:52	09/12/0513:52	RIQ251	RHQ552	V005I24	Method Blank
LCS1W	V005I24L	1	NA	09/12/0511:59	09/12/0511:59	RIQ248	RHQ552	V005I24	Lab Control Sample (LCS)
LCD1W	V005I24C	1	NA	09/12/0512:37	09/12/0512:37	RIQ249	RHQ552	V005I24	LCS Duplicate
0003-61	I049-01	1	NA	09/12/0516:24	09/12/0516:24	RIQ255	RHQ552	V005I24	Field Sample
0003-62	I049-02	1	NA	09/12/0517:02	09/12/0517:02	RIQ256	RHQ552	V005I24	Field Sample
0003-63	I049-03	1	NA	09/12/0517:39	09/12/0517:39	RIQ257	RHQ552	V005I24	Field Sample
0003-64	I049-04	1	NA	09/12/0518:17	09/12/0518:17	RIQ258	RHQ552	V005I24	Field Sample
0003-65	I049-05	1	NA	09/12/0518:55	09/12/0518:55	RIQ259	RHQ552	V005I24	Field Sample
0003-66	I049-06	1	NA	09/12/0519:32	09/12/0519:32	RIQ260	RHQ552	V005I24	Field Sample
0003-63MS	I049-03M	1	NA	09/12/0520:09	09/12/0520:09	RIQ261	RHQ552	V005I24	Matrix Spike Sample (MS)
0003-63MSD	I049-03S	1	NA	09/12/0520:46	09/12/0520:46	RIQ262	RHQ552	V005I24	MS Duplicate (MSD)

FN - Filename
% Moist - Percent Moisture

2002

SAMPLE RESULTS

2003

EMA LABORATORIES

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: SES-TECH	Date Collected:	09/07/05
Project	: CAMP PENDLETON, UST SITE 1106	Date Received:	09/08/05
Batch No.	: 051049	Date Extracted:	09/12/05 16:24
Sample ID:	0003-61	Date Analyzed:	09/12/05 16:24
Lab Samp ID:	I049-01	Dilution Factor:	1
Lab File ID:	RIQ255	Matrix	: WATER
Ext Btch ID:	V005124	% Moisture	: NA
Calib. Ref.:	RHQ552	Instrument ID	: T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.2
1,1,2,2-TETRACHLOROETHANE	ND	1	.2
1,1,2-TRICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHENE	ND	5	.2
1,2-DICHLOROETHANE	ND	.5	.2
1,2-DICHLOROPROPANE	ND	5	.2
METHYL ETHYL KETONE	ND	50	.2
2-HEXANONE	ND	50	5
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	.5	.2
BROMODICHLOROMETHANE	ND	5	.2
BROMOFORM	ND	5	.3
BROMOMETHANE	ND	5	.2
CARBON TETRACHLORIDE	ND	.5	.2
CHLOROBENZENE	ND	5	.2
CHLOROETHANE	ND	5	.2
CHLOROFORM	ND	5	.2
CHLOROMETHANE	ND	5	.2
CIS-1,2-DICHLOROETHENE	ND	5	.2
CIS-1,3-DICHLOROPROPENE	ND	.5	.2
DIBROMOCHLOROMETHANE	ND	5	.2
ETHYLBENZENE	ND	.5	.2
XYLENES	ND	5	.2
MTBE	ND	1	.2
METHYLENE CHLORIDE	ND	5	.5
STYRENE	ND	5	.2
TETRACHLOROETHYLENE	ND	5	.2
TOLUENE	ND	.5	.2
TRANS-1,2-DICHLOROETHENE	ND	5	.2
TRANS-1,3-DICHLOROPROPENE	ND	.5	.2
TRICHLOROETHENE	ND	5	.2
VINYL ACETATE	ND	50	.5
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	5
DIISOPROPYL ETHER	ND	5	.2
ETHYL TERT-BUTYL ETHER	ND	5	.2
TERT-AMYL METHYL ETHER	ND	5	.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	80	65-135
TOLUENE-D8	88	75-125
BROMOFLUOROBENZENE	81	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

2004

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: 09/07/05
Project : CAMP PENDLETON, UST SITE 1106	Date Received: 09/08/05
Batch No. : 051049	Date Extracted: 09/12/05 17:02
Sample ID: 0003-62	Date Analyzed: 09/12/05 17:02
Lab Samp ID: 1049-02	Dilution Factor: 1
Lab File ID: R1Q256	Matrix : WATER
Ext Btch ID: V005124	% Moisture : NA
Calib. Ref.: RHQ552	Instrument ID : T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.2
1,1,2,2-TETRACHLOROETHANE	ND	1	.2
1,1,2-TRICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHENE	ND	5	.2
1,2-DICHLOROETHANE	ND	.5	.2
1,2-DICHLOROPROPANE	ND	5	.2
METHYL ETHYL KETONE	ND	50	.2
2-HEXANONE	ND	50	5
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	.5	.2
BROMODICHLOROMETHANE	.31J	5	.2
BROMOFORM	ND	5	.3
BROMOMETHANE	ND	5	.2
CARBON TETRACHLORIDE	ND	.5	.2
CHLOROBENZENE	ND	5	.2
CHLOROETHANE	ND	5	.2
CHLOROFORM	.47J	5	.2
CHLOROMETHANE	ND	5	.2
CIS-1,2-DICHLOROETHENE	ND	5	.2
CIS-1,3-DICHLOROPROPENE	ND	.5	.2
DIBROMOCHLOROMETHANE	ND	5	.2
ETHYLBENZENE	ND	.5	.2
XYLENES	ND	5	.2
MTBE	ND	1	.2
METHYLENE CHLORIDE	ND	5	.5
STYRENE	ND	5	.2
TETRACHLOROETHYLENE	ND	5	.2
TOLUENE	ND	.5	.2
TRANS-1,2-DICHLOROETHENE	ND	5	.2
TRANS-1,3-DICHLOROPROPENE	ND	.5	.2
TRICHLOROETHENE	ND	5	.2
VINYL ACETATE	ND	50	.5
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	5
DIISOPROPYL ETHER	ND	5	.2
ETHYL TERT-BUTYL ETHER	ND	5	.2
TERT-AMYL METHYL ETHER	ND	5	.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	65-135
TOLUENE-D8	103	75-125
BROMOFLUOROBENZENE	100	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

2005

EMA LABORATORIES

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: 09/07/05
Project : CAMP PENDLETON, UST SITE 1106	Date Received: 09/08/05
Batch No. : 051049	Date Extracted: 09/12/05 17:39
Sample ID: 0003-63	Date Analyzed: 09/12/05 17:39
Lab Samp ID: 1049-03	Dilution Factor: 1
Lab File ID: R1Q257	Matrix : WATER
Ext Btch ID: V005I24	% Moisture : NA
Calib. Ref.: RHQ552	Instrument ID : T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.2
1,1,2,2-TETRACHLOROETHANE	ND	1	.2
1,1,2-TRICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHENE	ND	5	.2
1,2-DICHLOROETHANE	ND	.5	.2
1,2-DICHLOROPROPANE	ND	5	.2
METHYL ETHYL KETONE	ND	50	.2
2-HEXANONE	ND	50	5
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	.5	.2
BROMODICHLOROMETHANE	ND	5	.2
BROMOFORM	ND	5	.3
BROMOMETHANE	ND	5	.2
CARBON TETRACHLORIDE	ND	.5	.2
CHLOROBENZENE	ND	5	.2
CHLOROETHANE	ND	5	.2
CHLOROFORM	ND	5	.2
CHLOROMETHANE	ND	5	.2
CIS-1,2-DICHLOROETHENE	ND	5	.2
CIS-1,3-DICHLOROPROPENE	ND	.5	.2
DIBROMOCHLOROMETHANE	ND	5	.2
ETHYLBENZENE	ND	.5	.2
XYLENES	ND	5	.2
MTBE	ND	1	.2
METHYLENE CHLORIDE	ND	5	.5
STYRENE	ND	5	.2
TETRACHLOROETHYLENE	ND	5	.2
TOLUENE	ND	.5	.2
TRANS-1,2-DICHLOROETHENE	ND	5	.2
TRANS-1,3-DICHLOROPROPENE	ND	.5	.2
TRICHLOROETHENE	ND	5	.2
VINYL ACETATE	ND	50	.5
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	5
DIISOPROPYL ETHER	ND	5	.2
ETHYL TERT-BUTYL ETHER	ND	5	.2
TERT-AMYL METHYL ETHER	ND	5	.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	65-135
TOLUENE-D8	105	75-125
BROMOFLUOROBENZENE	102	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

2006

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: 09/07/05
Project : CAMP PENDLETON, UST SITE 1106	Date Received: 09/08/05
Batch No. : 051049	Date Extracted: 09/12/05 18:17
Sample ID: 0003-64	Date Analyzed: 09/12/05 18:17
Lab Samp ID: I049-04	Dilution Factor: 1
Lab File ID: RIQ258	Matrix : WATER
Ext Btch ID: V005124	% Moisture : NA
Calib. Ref.: RHQ552	Instrument ID : T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.2
1,1,2,2-TETRACHLOROETHANE	ND	1	.2
1,1,2-TRICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHENE	ND	5	.2
1,2-DICHLOROETHANE	ND	.5	.2
1,2-DICHLOROPROPANE	ND	5	.2
METHYL ETHYL KETONE	ND	50	.2
2-HEXANONE	ND	50	5
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	.5	.2
BROMODICHLOROMETHANE	ND	5	.2
BROMOFORM	ND	5	.3
BROMOMETHANE	ND	5	.2
CARBON TETRACHLORIDE	ND	.5	.2
CHLOROBENZENE	ND	5	.2
CHLOROETHANE	ND	5	.2
CHLOROFORM	.28J	5	.2
CHLOROMETHANE	ND	5	.2
CIS-1,2-DICHLOROETHENE	ND	5	.2
CIS-1,3-DICHLOROPROPENE	ND	.5	.2
DIBROMOCHLOROMETHANE	ND	5	.2
ETHYLBENZENE	ND	.5	.2
XYLENES	ND	5	.2
MTBE	ND	1	.2
METHYLENE CHLORIDE	ND	5	.5
STYRENE	ND	5	.2
TETRACHLOROETHYLENE	2.6J	5	.2
TOLUENE	ND	.5	.2
TRANS-1,2-DICHLOROETHENE	ND	5	.2
TRANS-1,3-DICHLOROPROPENE	ND	.5	.2
TRICHLOROETHENE	ND	5	.2
VINYL ACETATE	ND	50	.5
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	5
DIISOPROPYL ETHER	ND	5	.2
ETHYL TERT-BUTYL ETHER	ND	5	.2
TERT-AMYL METHYL ETHER	ND	5	.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	96	65-135
TOLUENE-D8	107	75-125
BROMOFLUOROBENZENE	103	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

2007

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: 09/07/05
Project : CAMP PENDLETON, UST SITE 1106	Date Received: 09/08/05
Batch No. : 051049	Date Extracted: 09/12/05 18:55
Sample ID: 0003-65	Date Analyzed: 09/12/05 18:55
Lab Samp ID: 1049-05	Dilution Factor: 1
Lab File ID: R1Q259	Matrix : WATER
Ext Btch ID: V005124	% Moisture : NA
Calib. Ref.: RHQ552	Instrument ID : T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.2
1,1,2,2-TETRACHLOROETHANE	ND	1	.2
1,1,2-TRICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHENE	ND	5	.2
1,2-DICHLOROETHANE	ND	.5	.2
1,2-DICHLOROPROPANE	ND	5	.2
METHYL ETHYL KETONE	ND	50	.2
2-HEXANONE	ND	50	5
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	.5	.2
BROMODICHLOROMETHANE	ND	5	.2
BROMOFORM	ND	5	.3
BROMOMETHANE	ND	5	.2
CARBON TETRACHLORIDE	ND	.5	.2
CHLOROBENZENE	ND	5	.2
CHLOROETHANE	ND	5	.2
CHLOROFORM	.3J	5	.2
CHLOROMETHANE	ND	5	.2
CIS-1,2-DICHLOROETHENE	ND	5	.2
CIS-1,3-DICHLOROPROPENE	ND	.5	.2
DIBROMOCHLOROMETHANE	ND	5	.2
ETHYLBENZENE	ND	.5	.2
XYLENES	ND	5	.2
MTBE	ND	1	.2
METHYLENE CHLORIDE	ND	5	.5
STYRENE	ND	5	.2
TETRACHLOROETHYLENE	2.7J	5	.2
TOLUENE	ND	.5	.2
TRANS-1,2-DICHLOROETHENE	ND	5	.2
TRANS-1,3-DICHLOROPROPENE	ND	.5	.2
TRICHLOROETHENE	ND	5	.2
VINYL ACETATE	ND	50	.5
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	5
DIISOPROPYL ETHER	ND	5	.2
ETHYL TERT-BUTYL ETHER	ND	5	.2
TERT-AMYL METHYL ETHER	ND	5	.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	94	65-135
TOLUENE-D8	107	75-125
BROMOFLUOROBENZENE	104	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

2012

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: SES-TECH	Date Collected:	09/07/05
Project	: CAMP PENDLETON, UST SITE 1106	Date Received:	09/08/05
Batch No.	: 051049	Date Extracted:	09/12/05 19:32
Sample ID:	0003-66	Date Analyzed:	09/12/05 19:32
Lab Samp ID:	I049-06	Dilution Factor:	1
Lab File ID:	RIQ260	Matrix :	WATER
Ext Btch ID:	VQ05124	% Moisture :	NA
Calib. Ref.:	RHQ552	Instrument ID :	T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.2
1,1,2,2-TETRACHLOROETHANE	ND	1	.2
1,1,2-TRICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHENE	ND	5	.2
1,2-DICHLOROETHANE	ND	.5	.2
1,2-DICHLOROPROPANE	ND	5	.2
METHYL ETHYL KETONE	ND	50	.2
2-HEXANONE	ND	50	5
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	.5	.2
BROMODICHLOROMETHANE	ND	5	.2
BROMOFORM	ND	5	.3
BROMOMETHANE	ND	5	.2
CARBON TETRACHLORIDE	ND	.5	.2
CHLOROBENZENE	ND	5	.2
CHLOROETHANE	ND	5	.2
CHLOROFORM	.26J	5	.2
CHLOROMETHANE	ND	5	.2
CIS-1,2-DICHLOROETHENE	ND	5	.2
CIS-1,3-DICHLOROPROPENE	ND	.5	.2
DIBROMOCHLOROMETHANE	ND	5	.2
ETHYLBENZENE	ND	.5	.2
XYLENES	ND	5	.2
MTBE	ND	1	.2
METHYLENE CHLORIDE	ND	5	.5
STYRENE	ND	5	.2
TETRACHLOROETHYLENE	2.5J	5	.2
TOLUENE	ND	.5	.2
TRANS-1,2-DICHLOROETHENE	ND	5	.2
TRANS-1,3-DICHLOROPROPENE	ND	.5	.2
TRICHLOROETHENE	ND	5	.2
VINYL ACETATE	ND	50	.5
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	5
DIISOPROPYL ETHER	ND	5	.2
ETHYL TERT-BUTYL ETHER	ND	5	.2
TERT-AMYL METHYL ETHER	ND	5	.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	93	65-135
TOLUENE-D8	108	75-125
BROMOFLUOROBENZENE	105	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

2013

QC SUMMARIES

2014

EMA LABORATORIES

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: NA
Project : CAMP PENDLETON, UST SITE 1106	Date Received: 09/12/05
Batch No. : 051049	Date Extracted: 09/12/05 13:52
Sample ID: MBLK1W	Date Analyzed: 09/12/05 13:52
Lab Samp ID: V0051240	Dilution Factor: 1
Lab File ID: RIQ251	Matrix : WATER
Ext Btch ID: V005124	% Moisture : NA
Calib. Ref.: RHQ552	Instrument ID : T-005

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	.2
1,1,2,2-TETRACHLOROETHANE	ND	1	.2
1,1,2-TRICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHANE	ND	5	.2
1,1-DICHLOROETHENE	ND	5	.2
1,2-DICHLOROETHANE	ND	.5	.2
1,2-DICHLOROPROPANE	ND	5	.2
METHYL ETHYL KETONE	ND	50	.2
2-HEXANONE	ND	50	5
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	.5	.2
BROMODICHLOROMETHANE	ND	5	.2
BROMOFORM	ND	5	.3
BROMOMETHANE	ND	5	.2
CARBON TETRACHLORIDE	ND	.5	.2
CHLOROBENZENE	ND	5	.2
CHLOROETHANE	ND	5	.2
CHLOROFORM	ND	5	.2
CHLOROMETHANE	ND	5	.2
CIS-1,2-DICHLOROETHENE	ND	5	.2
CIS-1,3-DICHLOROPROPENE	ND	.5	.2
DIBROMOCHLOROMETHANE	ND	5	.2
ETHYLBENZENE	ND	.5	.2
XYLENES	ND	5	.2
MTBE	ND	1	.2
METHYLENE CHLORIDE	ND	5	.5
STYRENE	ND	5	.2
TETRACHLOROETHYLENE	ND	5	.2
TOLUENE	ND	.5	.2
TRANS-1,2-DICHLOROETHENE	ND	5	.2
TRANS-1,3-DICHLOROPROPENE	ND	.5	.2
TRICHLOROETHENE	ND	5	.2
VINYL ACETATE	ND	50	.5
VINYL CHLORIDE	ND	.5	.2
TERT-BUTYL ALCOHOL	ND	20	5
DIISOPROPYL ETHER	ND	5	.2
ETHYL TERT-BUTYL ETHER	ND	5	.2
TERT-AMYL METHYL ETHER	ND	5	.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	82	65-135
TOLUENE-D8	94	75-125
BROMOFLUOROBENZENE	93	75-125

R.L. : Reporting limit
* : Out of QC
E : Exceeded calibration range
B : Found in associated method blank
J : Value between R.L. and MDL
D : Value from dilution analysis
D.O. : Diluted out

2015

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SES-TECH
PROJECT: CAMP PENDLETON, UST SITE 1106
BATCH NO.: 051049
METHOD: SW 5030B/8260B

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: V005124Q V005124L V005124C
LAB FILE ID: R1Q251 R1Q248 R1Q249
DATE EXTRACTED: 09/12/0513:52 09/12/0511:59 09/12/0512:37 DATE COLLECTED: NA
DATE ANALYZED: 09/12/0513:52 09/12/0511:59 09/12/0512:37 DATE RECEIVED: 09/12/05
PREP. BATCH: V005124 V005124 V005124
CALIB. REF: RHQ552 RHQ552 RHQ552

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1-Dichloroethene	ND	10	7.87	79	10	7.65	76	3	75-125	20
Benzene	ND	10	9.76	98	10	9.61	96	2	75-125	20
Chlorobenzene	ND	10	9.88	99	10	9.58	96	3	75-125	20
Toluene	ND	10	10.9	109	10	10.8	108	2	75-125	20
Trichloroethene	ND	10	10.1	101	10	9.94	99	2	75-125	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10	8.13	81	10	7.43	74	65-135
Toluene-d8	10	9.17	92	10	8.68	87	75-125
Bromofluorobenzene	10	8.9	89	10	8.56	86	75-125

2016

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: SES-TECH
PROJECT: CAMP PENDLETON, UST SITE 1106
BATCH NO.: 051049
METHOD: SW 5030B/8260B

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	0003-63				
LAB SAMP ID:	1049-03	1049-03M	1049-03S		
LAB FILE ID:	R1Q257	R1Q261	R1Q262		
DATE EXTRACTED:	09/12/0517:39	09/12/0520:09	09/12/0520:46	DATE COLLECTED:	09/07/05
DATE ANALYZED:	09/12/0517:39	09/12/0520:09	09/12/0520:46	DATE RECEIVED:	09/08/05
PREP. BATCH:	V005124	V005124	V005124		
CALIB. REF:	RHQ552	RHQ552	RHQ552		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1-Dichloroethene	ND	10	7.99	80	10	8.43	84	5	75-125	20
Benzene	ND	10	9.24	92	10	9.65	97	4	75-125	20
Chlorobenzene	ND	10	9.52	95	10	9.79	98	3	75-125	20
Toluene	ND	10	10.3	103	10	10.8	108	4	75-125	20
Trichloroethene	ND	10	9.84	98	10	10.2	102	4	75-125	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10	8.4	84	10	8.67	87	65-135
Toluene-d8	10	9.71	97	10	10.3	103	75-125
Bromofluorobenzene	10	9.51	95	10	9.88	99	75-125

2017

LABORATORY REPORT FOR

SES-TECH

CAMP PENDLETON, UST SITE 1106

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

SDG#: 05I049

3000

CASE NARRATIVE

CLIENT: SES-TECH

PROJECT: CAMP PENDLETON, UST SITE 1106

SDG: 05I049

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Five (5) water samples were received on 09/08/05 for Semi Volatile Organic analysis by Method 3520C/8270C SIM in accordance with USEPA SW846, 3rd ed.

1. **Holding Time**

   Analytical holding time was met.

2. **Tuning and Calibration**

   Tuning and calibration were carried out at 12-hour interval. All QC requirements were met except:

Date	QC	Compound	Outlier	QC Limit
09/22/05	DCC	Indeno(1,2,3-cd)pyrene	%Dev 31	≤25

3. **Method Blank**

   Method blank was free of contamination at half of the reporting limit.

4. **Surrogate Recovery**

   Recoveries were within QC limit.

5. **Lab Control Sample**

   Recoveries were within QC limit.

6. **Matrix Spike/Matrix Spike Duplicate**

   Sample I049-03 was spiked. All recoveries were within QC limit.

7. **Sample Analysis**

   Samples were analyzed according to the prescribed QC procedures. All criteria were met with the aforementioned exception.

LAB CHRONICLE
SEMI VOLATILE ORGANICS BY GC/MS

Client : SES-TECH
Project : CAMP PENDLETON, UST SITE 1106

SDG NO. : 051049
Instrument ID : T-042

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVI021WB	1	NA	09/22/0515:06	09/12/0516:30	RIX142	RIX008	SVI021W	Method Blank
LCS1W	SVI021WL	1	NA	09/22/0515:31	09/12/0516:30	RIX143	RIX008	SVI021W	Lab Control Sample (LCS)
0003-62	I049-02	.95	NA	09/22/0518:50	09/12/0516:30	RIX151	RIX008	SVI021W	Field Sample
0003-63	I049-03	.94	NA	09/22/0519:15	09/12/0516:30	RIX152	RIX008	SVI021W	Field Sample
0003-64	I049-04	1	NA	09/22/0520:29	09/12/0516:30	RIX155	RIX008	SVI021W	Field Sample
0003-65	I049-05	.98	NA	09/22/0520:54	09/12/0516:30	RIX156	RIX008	SVI021W	Field Sample
0003-66	I049-06	.97	NA	09/22/0521:19	09/12/0516:30	RIX157	RIX008	SVI021W	Field Sample
0003-63MS	I049-03M	.98	NA	09/22/0519:40	09/12/0516:30	RIX153	RIX008	SVI021W	Matrix Spike Sample (MS)
0003-63MSD	I049-03S	.97	NA	09/22/0520:05	09/12/0516:30	RIX154	RIX008	SVI021W	MS Duplicate (MSD)

FN - Filename
% Moist - Percent Moisture

EMA LABORATORIES

SAMPLE RESULTS

3003

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: 09/07/05
Project : CAMP PENDLETON, UST SITE 1106	Date Received: 09/08/05
Batch No. : 051049	Date Extracted: 09/12/05 16:30
Sample ID: 0003-62	Date Analyzed: 09/22/05 18:50
Lab Samp ID: 1049-02	Dilution Factor: .95
Lab File ID: RIX151	Matrix : WATER
Ext Btch ID: SVI021W	% Moisture : NA
Calib. Ref.: RIX008	Instrument ID : T-042

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	ND	.95	.19
ACENAPHTHYLENE	ND	.95	.19
ANTHRACENE	ND	1.9	.19
BENZO(A)ANTHRACENE	ND	1.9	.19
BENZO(A)PYRENE	ND	.95	.19
BENZO(B)FLUORANTHENE	ND	.95	.19
BENZO(K)FLUORANTHENE	ND	1.9	.19
BENZO(G,H,I)PERYLENE	ND	.95	.19
CHRYSENE	ND	1.9	.19
DIBENZO(A,H)ANTHRACENE	ND	.95	.19
FLUORANTHENE	ND	1.9	.19
FLUORENE	ND	1.9	.19
INDENO(1,2,3-CD)PYRENE	ND	.95	.19
NAPHTHALENE	ND	.95	.19
PHENANTHRENE	ND	.95	.19
PYRENE	ND	1.9	.19

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	60	50-130

RL: Reporting Limit

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: SES-TECH	Date Collected:	09/07/05
Project	: CAMP PENDLETON, UST SITE 1106	Date Received:	09/08/05
Batch No.	: 051049	Date Extracted:	09/12/05 16:30
Sample ID	: 0003-63	Date Analyzed:	09/22/05 19:15
Lab Samp ID	: I049-03	Dilution Factor:	.94
Lab File ID	: RIX152	Matrix	: WATER
Ext Btch ID	: SVI021W	% Moisture	: NA
Calib. Ref.	: RIX008	Instrument ID	: T-042

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	ND	.94	.19
ACENAPHTHYLENE	ND	.94	.19
ANTHRACENE	ND	1.9	.19
BENZO(A)ANTHRACENE	ND	1.9	.19
BENZO(A)PYRENE	ND	.94	.19
BENZO(B)FLUORANTHENE	ND	.94	.19
BENZO(K)FLUORANTHENE	ND	1.9	.19
BENZO(G,H,I)PERYLENE	ND	.94	.19
CHRYSENE	ND	1.9	.19
DIBENZO(A,H)ANTHRACENE	ND	.94	.19
FLUORANTHENE	ND	1.9	.19
FLUORENE	ND	1.9	.19
INDENO(1,2,3-CD)PYRENE	ND	.94	.19
NAPHTHALENE	ND	.94	.19
PHENANTHRENE	ND	.94	.19
PYRENE	ND	1.9	.19

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	84	50-130

RL: Reporting Limit

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client	: SES-TECH	Date Collected:	09/07/05
Project	: CAMP PENDLETON, UST SITE 1106	Date Received:	09/08/05
Batch No.	: 051049	Date Extracted:	09/12/05 16:30
Sample ID:	0003-64	Date Analyzed:	09/22/05 20:29
Lab Samp ID:	I049-04	Dilution Factor:	1
Lab File ID:	RIX155	Matrix :	WATER
Ext Btch ID:	SVI021W	% Moisture :	NA
Calib. Ref.:	RIX008	Instrument ID :	T-042

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	ND	1	.2
ACENAPHTHYLENE	ND	1	.2
ANTHRACENE	ND	2	.2
BENZO(A)ANTHRACENE	ND	2	.2
BENZO(A)PYRENE	ND	1	.2
BENZO(B)FLUORANTHENE	ND	1	.2
BENZO(K)FLUORANTHENE	ND	2	.2
BENZO(G,H,I)PERYLENE	ND	1	.2
CHRYSENE	ND	2	.2
DIBENZO(A,H)ANTHRACENE	ND	1	.2
FLUORANTHENE	ND	2	.2
FLUORENE	ND	2	.2
INDENO(1,2,3-CD)PYRENE	ND	1	.2
NAPHTHALENE	ND	1	.2
PHENANTHRENE	ND	1	.2
PYRENE	ND	2	.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	82	50-130

RL: Reporting Limit

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\05I22\RIX155.D Vial: 18
Acq On : 22 Sep 05 20:29 Operator: SG
Sample : 05I049-04 Inst : TO42
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 23 13:40 2005 Quant Results File: SV42I12.RES

Quant Method : C:\HPCHEM\1\METHODS\SV42I12.M (RTE Integrator)
Title : METHOD 8270C SIM GCMS-HP
Last Update : Mon Sep 12 15:04:27 2005
Response via : Initial Calibration
DataAcq Meth : SV42I12

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	3.56	152	191775	10.00	ng	0.00
18) Phenanthrene-d10	9.31	188	664421	10.00	ng	-0.01
26) Perylene-d12	14.63	264	245135	10.00	ng	-0.02
System Monitoring Compounds						
25) Terphenyl-d14	11.49	244	412528	8.16	ng	-0.01
Target Compounds						Qvalue
29) bis(2-Ethylhexyl)phthalate	12.95	149	585068	9.33	ng	97

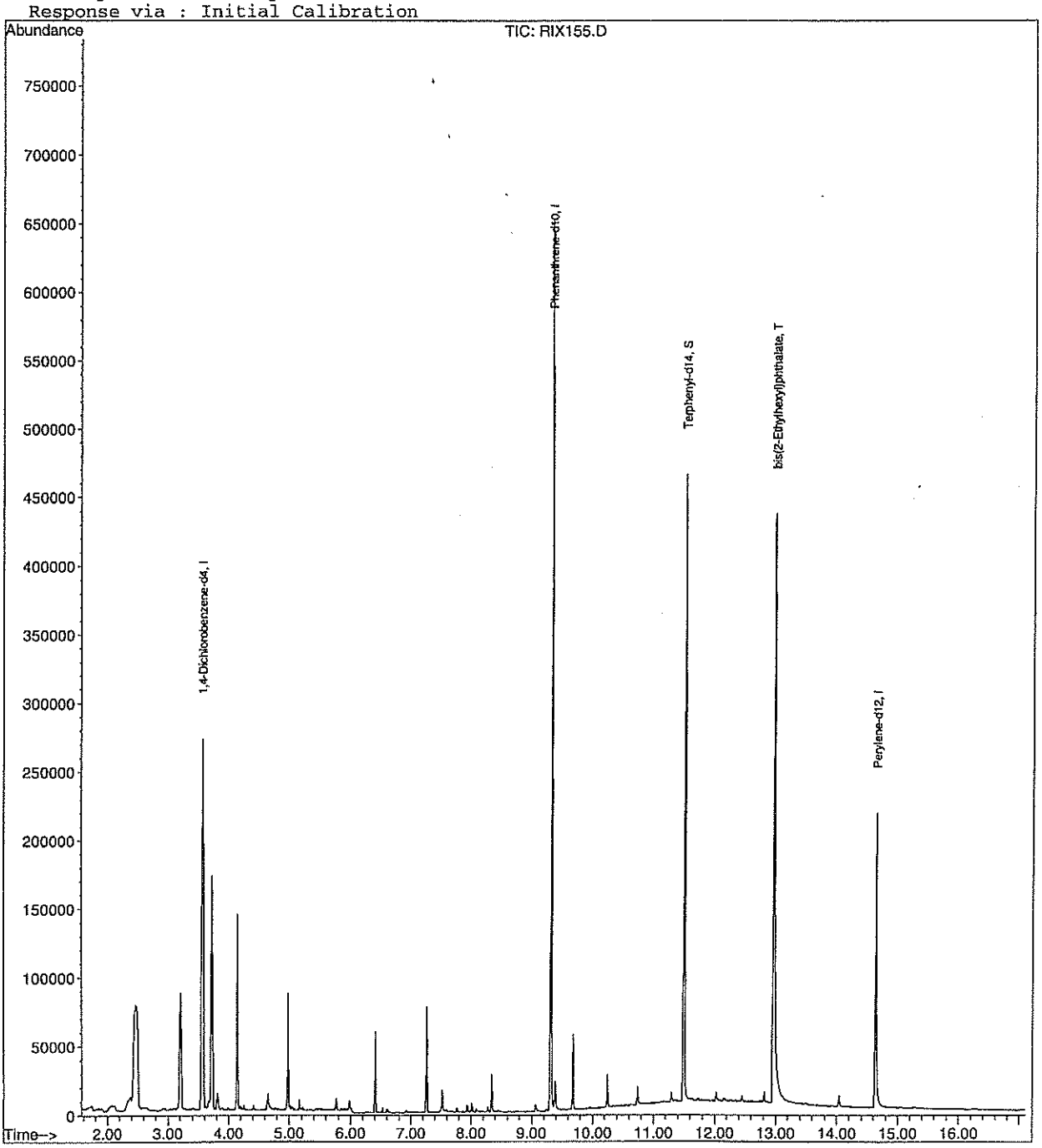
(#) = qualifier out of range (m) = manual integration

3007

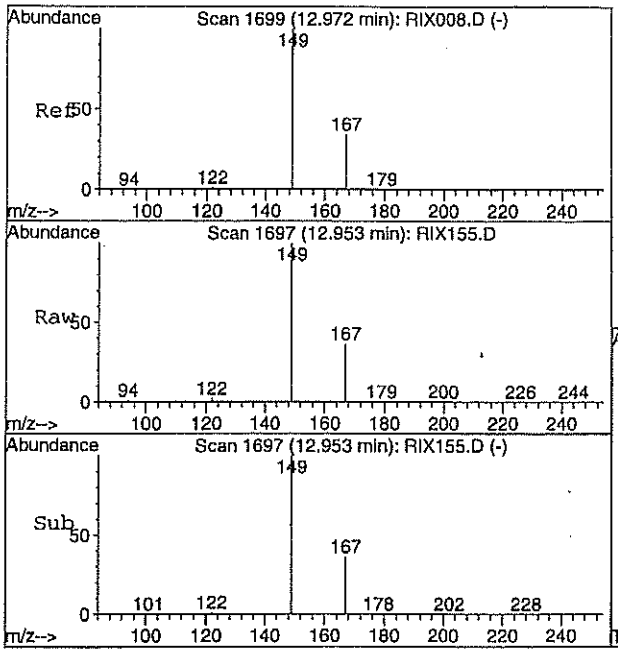
Quantitation Report

Data File : C:\HPCHEM\1\DATA\05I22\RIX155.D Vial: 18
Acq On : 22 Sep 05 20:29 Operator: SG
Sample : 05I049-04 Inst : TO42
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Sep 23 13:40 2005 Quant Results File: SV42I12.RES

Method : C:\HPCHEM\1\METHODS\SV42I12.M (RTE Integrator)
Title : METHOD 8270C SIM GCMS-HP
Last Update : Mon Sep 12 15:04:27 2005
Response via : Initial Calibration



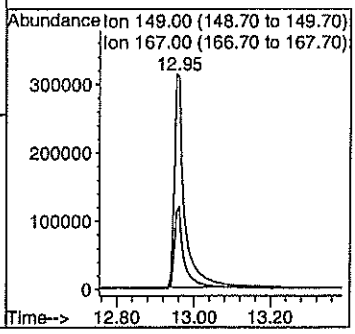
3008



#29
bis(2-Ethylhexyl)phthalate
Concen: 9.33 ng
RT: 12.95 min Scan# 1697
Delta R.T. -0.02 min
Lab File: RIX155.D
Acq: 22 Sep 05 20:29

Tgt Ion:149 Resp: 585068

Ion	Ratio	Lower	Upper
149	100		
167	35.8	4.2	64.2



SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: 09/07/05
Project : CAMP PENDLETON, UST SITE 1106	Date Received: 09/08/05
Batch No. : 051049	Date Extracted: 09/12/05 16:30
Sample ID: 0003-65	Date Analyzed: 09/22/05 20:54
Lab Samp ID: 1049-05	Dilution Factor: .98
Lab File ID: RIX156	Matrix : WATER
Ext Btch ID: SV1021W	% Moisture : NA
Calib. Ref.: RIX008	Instrument ID : T-042

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	ND	.98	.2
ACENAPHTHYLENE	ND	.98	.2
ANTHRACENE	ND	2	.2
BENZO(A)ANTHRACENE	ND	2	.2
BENZO(A)PYRENE	ND	.98	.2
BENZO(B)FLUORANTHENE	ND	.98	.2
BENZO(K)FLUORANTHENE	ND	2	.2
BENZO(G,H,I)PERYLENE	ND	.98	.2
CHRYSENE	ND	2	.2
DIBENZO(A,H)ANTHRACENE	ND	.98	.2
FLUORANTHENE	ND	2	.2
FLUORENE	ND	2	.2
INDENO(1,2,3-CD)PYRENE	ND	.98	.2
NAPHTHALENE	ND	.98	.2
PHENANTHRENE	ND	.98	.2
PYRENE	ND	2	.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	89	50-130

RL: Reporting Limit

3010

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: 09/07/05
Project : CAMP PENDLETON, UST SITE 1106	Date Received: 09/08/05
Batch No. : 051049	Date Extracted: 09/12/05 16:30
Sample ID: 0003-66	Date Analyzed: 09/22/05 21:19
Lab Samp ID: I049-06	Dilution Factor: .97
Lab File ID: RIX157	Matrix : WATER
Ext Btch ID: SVI021W	% Moisture : NA
Calib. Ref.: RIX008	Instrument ID : T-042

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	ND	.97	.19
ACENAPHTHYLENE	ND	.97	.19
ANTHRACENE	ND	1.9	.19
BENZO(A)ANTHRACENE	ND	1.9	.19
BENZO(A)PYRENE	ND	.97	.19
BENZO(B)FLUORANTHENE	ND	.97	.19
BENZO(K)FLUORANTHENE	ND	1.9	.19
BENZO(G,H,I)PERYLENE	ND	.97	.19
CHRYSENE	ND	1.9	.19
DIBENZO(A,H)ANTHRACENE	ND	.97	.19
FLUORANTHENE	ND	1.9	.19
FLUORENE	ND	1.9	.19
INDENO(1,2,3-CD)PYRENE	ND	.97	.19
NAPHTHALENE	ND	.97	.19
PHENANTHRENE	ND	.97	.19
PYRENE	ND	1.9	.19

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	83	50-130

RL: Reporting Limit

QC SUMMARIES

SW 3520C/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS

Client : SES-TECH	Date Collected: NA
Project : CAMP PENDLETON, UST SITE 1106	Date Received: 09/12/05
Batch No. : 051049	Date Extracted: 09/12/05 16:30
Sample ID: MBLK1W	Date Analyzed: 09/22/05 15:06
Lab Samp ID: SVI021WB	Dilution Factor: 1
Lab File ID: RIX142	Matrix : WATER
Ext Btch ID: SVI021W	% Moisture : NA
Calib. Ref.: RIX008	Instrument ID : T-042

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ACENAPHTHENE	ND	1	.2
ACENAPHTHYLENE	ND	1	.2
ANTHRACENE	ND	2	.2
BENZO(A)ANTHRACENE	ND	2	.2
BENZO(A)PYRENE	ND	1	.2
BENZO(B)FLUORANTHENE	ND	1	.2
BENZO(K)FLUORANTHENE	ND	2	.2
BENZO(G,H,I)PERYLENE	ND	1	.2
CHRYSENE	ND	2	.2
DIBENZO(A,H)ANTHRACENE	ND	1	.2
FLUORANTHENE	ND	2	.2
FLUORENE	ND	2	.2
INDENO(1,2,3-CD)PYRENE	ND	1	.2
NAPHTHALENE	ND	1	.2
PHENANTHRENE	ND	1	.2
PYRENE	ND	2	.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	60	50-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: SES-TECH
PROJECT: CAMP PENDLETON, UST SITE 1106
BATCH NO.: 051049
METHOD: SW 3520C/8270C SIM

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1W			
LAB SAMP ID:	SVI021WB	SVI021WL		
LAB FILE ID:	RIX142	RIX143		
DATE EXTRACTED:	09/12/0516:30	09/12/0516:30	DATE COLLECTED:	NA
DATE ANALYZED:	09/22/0515:06	09/22/0515:31	DATE RECEIVED:	09/12/05
PREP. BATCH:	SVI021W	SVI021W		
CALIB. REF:	RIX008	RIX008		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	QC LIMIT (%)
Acenaphthene	ND	10	6.39	64	40-130
Acenaphthylene	ND	10	6.9	69	40-130
Anthracene	ND	10	5.71	57	50-130
Benzo(a)anthracene	ND	10	8.77	88	50-130
Benzo(a)pyrene	ND	10	9.1	91	50-130
Benzo(b)fluoranthene	ND	10	9.34	93	50-130
Benzo(k)fluoranthene	ND	10	8.54	85	30-150
Benzo(g,h,i)perylene	ND	10	9.97	100	50-130
Chrysene	ND	10	8.44	84	50-130
Dibenzo(a,h)anthracene	ND	10	10.4	104	40-140
Fluoranthene	ND	10	6.24	62	50-130
Fluorene	ND	10	6.57	66	40-130
Indeno(1,2,3-cd)pyrene	ND	10	12.4	124	30-140
Naphthalene	ND	10	5.23	52	30-130
Phenanthrene	ND	10	5.61	56	40-130
Pyrene	ND	10	6.13	61	40-130

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	QC LIMIT (%)
Terphenyl-d14	10	6.22	62	50-130

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: SES-TECH
PROJECT: CAMP PENDLETON, UST SITE 1106
BATCH NO.: 051049
METHOD: SW 3520C/8270C SIM

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	.94	.98	.97		
SAMPLE ID:	0003-63				
LAB SAMP ID:	I049-03	I049-03M	I049-03S		
LAB FILE ID:	RIX152	RIX153	RIX154		
DATE EXTRACTED:	09/12/0516:30	09/12/0516:30	09/12/0516:30	DATE COLLECTED:	09/07/05
DATE ANALYZED:	09/22/0519:15	09/22/0519:40	09/22/0520:05	DATE RECEIVED:	09/08/05
PREP. BATCH:	SVI021W	SVI021W	SVI021W		
CALIB. REF:	RIX008	RIX008	RIX008		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Acenaphthene	ND	9.8	5.54	57	9.7	5.75	59	3	40-130	30
Acenaphthylene	ND	9.8	6.16	63	9.7	6.36	66	5	40-130	30
Anthracene	ND	9.8	6.3	64	9.7	7.03	72	12	50-130	30
Benzo(a)anthracene	ND	9.8	8.63	88	9.7	9.78	101	14	50-130	30
Benzo(a)pyrene	ND	9.8	7.86	80	9.7	8.88	92	14	50-130	30
Benzo(b)fluoranthene	ND	9.8	8.73	89	9.7	9.88	102	14	50-130	30
Benzo(k)fluoranthene	ND	9.8	7.24	74	9.7	8.3	86	15	30-150	30
Benzo(g,h,i)perylene	ND	9.8	7.27	74	9.7	8.21	85	14	50-130	30
Chrysene	ND	9.8	7.93	81	9.7	9.3	96	17	50-130	30
Dibenzo(a,h)anthracene	ND	9.8	8.14	83	9.7	9.07	94	12	40-140	30
Fluoranthene	ND	9.8	7.01	72	9.7	7.83	81	12	50-130	30
Fluorene	ND	9.8	5.76	59	9.7	6.09	63	7	40-130	30
Indeno(1,2,3-cd)pyrene	ND	9.8	10.3	105	9.7	11.8	121	14	30-140	30
Naphthalene	ND	9.8	4.11	42	9.7	3.82	39	7	30-130	30
Phenanthrene	ND	9.8	6.48	66	9.7	7.18	74	11	40-130	30
Pyrene	ND	9.8	6.77	69	9.7	7.56	78	12	40-130	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
Terphenyl-d14	9.8	8.07	82	9.7	8.19	84	50-130

LABORATORY REPORT FOR

SES-TECH

CAMP PENDLETON, UST SITE 1106

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 05I049

5000

CASE NARRATIVE

CLIENT: SES-TECH

PROJECT: CAMP PENDLETON, UST SITE 1106

SDG: 05I049

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Five (5) water samples were received on 09/08/05 for Total Petroleum Hydrocarbons by Extraction analysis by Method 3520C/8015B in accordance with SW846 3RD Edition.

1. **Holding Time**

   Analytical holding time was met. Extraction was performed on 09/12/05 and completed on 09/13/05.

2. **Calibration**

   Initial calibration was seven points for Diesel. %RSDs were within 20%. Continuing calibrations were carried out at 12-hour intervals and all recoveries were within 85-115%.

3. **Method Blank**

   Method blank was free of contamination at half of the reporting limit.

4. **Surrogate Recovery**

   All recoveries were within QC limits.

5. **Lab Control Sample/Lab Control Sample Duplicate**

   All recoveries were within QC limits.

6. **Matrix Spike/Matrix Spike Duplicate**

   Sample I049-03 was spiked. Recoveries were within QC limits.

7. **Sample Analysis**

   Samples were analyzed according to the prescribed QC procedures. All criteria were met. Sample results were quantitated from C10 to C24 using Diesel (C10-C24) calibration factor.

   Samples I049-04 to -06 displayed a motor oil-like fuel pattern.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : SES-TECH
Project : CAMP PENDLETON, UST SITE 1106

SDG NO. : 05I049
Instrument ID : GCT050

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSI013WB	1	NA	09/13/0514:40	09/12/0513:30	TI13004A	TI13002A	DSI013W	Method Blank
LCS1W	DSI013WL	1	NA	09/13/0515:22	09/12/0513:30	TI13005A	TI13002A	DSI013W	Lab Control Sample (LCS)
LCD1W	DSI013WC	1	NA	09/13/0516:04	09/12/0513:30	TI13006A	TI13002A	DSI013W	LCS Duplicate
0003-62	I049-02	.96	NA	09/13/0523:45	09/12/0513:30	TI13017A	TI13014A	DSI013W	Field Sample
0003-63	I049-03	.99	NA	09/14/0500:27	09/12/0513:30	TI13018A	TI13014A	DSI013W	Field Sample
0003-64	I049-04	.97	NA	09/14/0502:33	09/12/0513:30	TI13021A	TI13014A	DSI013W	Field Sample
0003-65	I049-05	.95	NA	09/14/0503:15	09/12/0513:30	TI13022A	TI13014A	DSI013W	Field Sample
0003-66	I049-06	.94	NA	09/14/0503:57	09/12/0513:30	TI13023A	TI13014A	DSI013W	Field Sample
0003-63MS	I049-03M	.99	NA	09/14/0501:09	09/12/0513:30	TI13019A	TI13014A	DSI013W	Matrix Spike Sample (MS)
0003-63MSD	I049-03S	.96	NA	09/14/0501:51	09/12/0513:30	TI13020A	TI13014A	DSI013W	MS Duplicate (MSD)

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: SES-TECH	Date Collected:	09/07/05
Project	: CAMP PENDLETON, UST SITE 1106	Date Received:	09/08/05
Batch No.	: 051049	Date Extracted:	09/12/05 13:30
Sample ID:	0003-62	Date Analyzed:	09/13/05 23:45
Lab Samp ID:	I049-02	Dilution Factor:	.96
Lab File ID:	TI13017A	Matrix :	WATER
Ext Btch ID:	DSI013W	% Moisture :	NA
Calib. Ref.:	TI13014A	Instrument ID :	GCTO50

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
DIESEL	ND	.096	.024

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
HEXACOSANE	103	65-135

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24

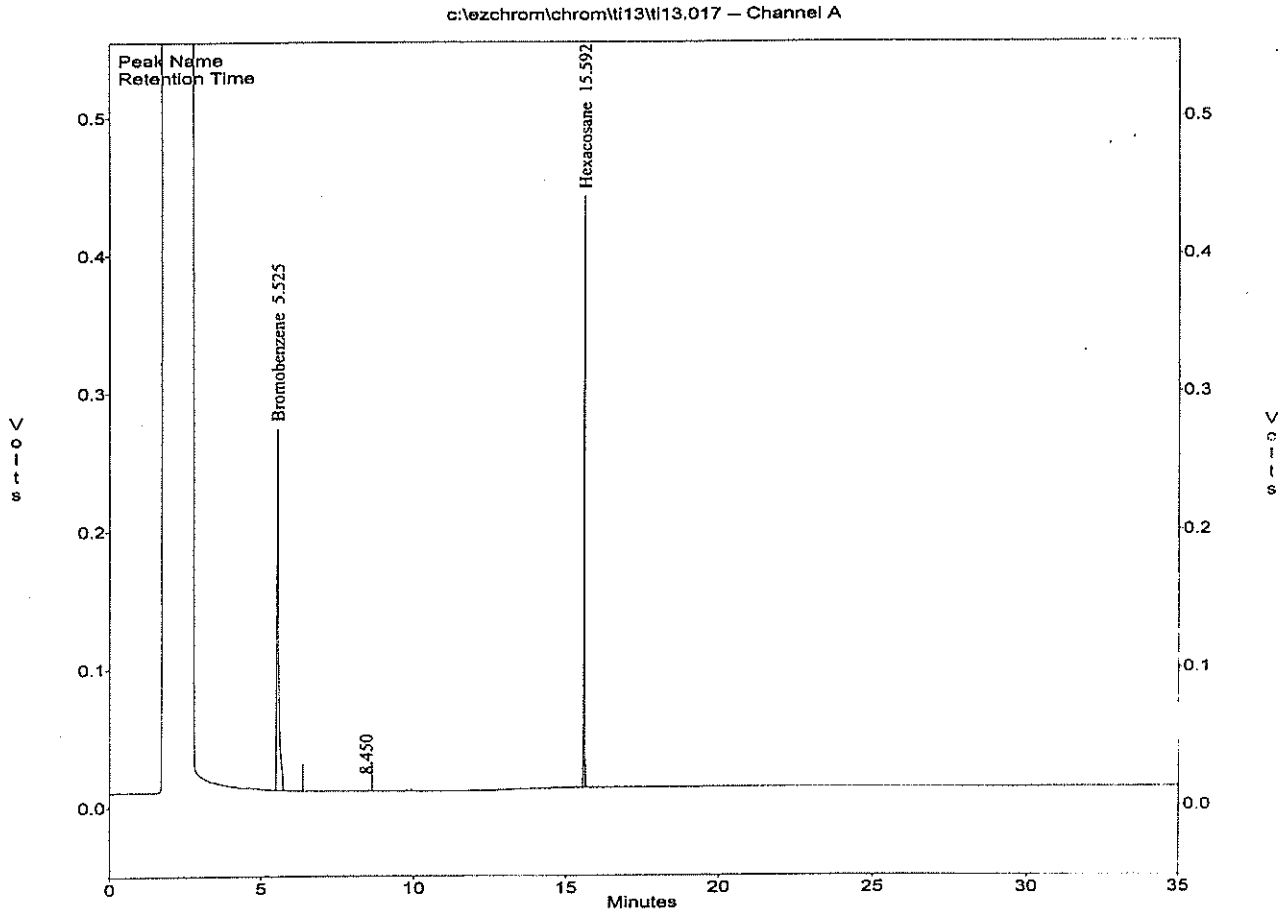
			Spike	QC Limit	QC Limit
SURR	: Hexacosane	Water	0.25 mg/L	63-165%	54-176%
		Soil	25 mg/kg	65-135%	60-160%

METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ti13\ti13.017
Method : c:\ezchrom\methods\ds50i01.met
Sample ID : 05I049-02
Acquired : Sep 13, 2005 23:45:59
Printed : Sep 14, 2005 09:34:38
User : JANE

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
1	Bromobenzene	5.525	1064820	13141.1	81.0
3	Hexacosane	15.592	740901	28776.7	25.7
G1	Diesel(TOTAL)		2365	23931.3	0.1
G2	Diesel(C10-C24)		2365	23756.5	0.1
G3	Diesel(C10-C28)		2365	23793.6	0.1



5005

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: SES-TECH	Date Collected:	09/07/05
Project	: CAMP PENDLETON, UST SITE 1106	Date Received:	09/08/05
Batch No.	: 051049	Date Extracted:	09/12/05 13:30
Sample ID:	0003-63	Date Analyzed:	09/14/05 00:27
Lab Samp ID:	1049-03	Dilution Factor:	.99
Lab File ID:	TI13018A	Matrix	: WATER
Ext Btch ID:	DSI013W	% Moisture	: NA
Calib. Ref.:	TI13014A	Instrument ID	: GCT050

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
DIESEL	ND	.099	.025

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
HEXACOSANE	108	65-135

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24

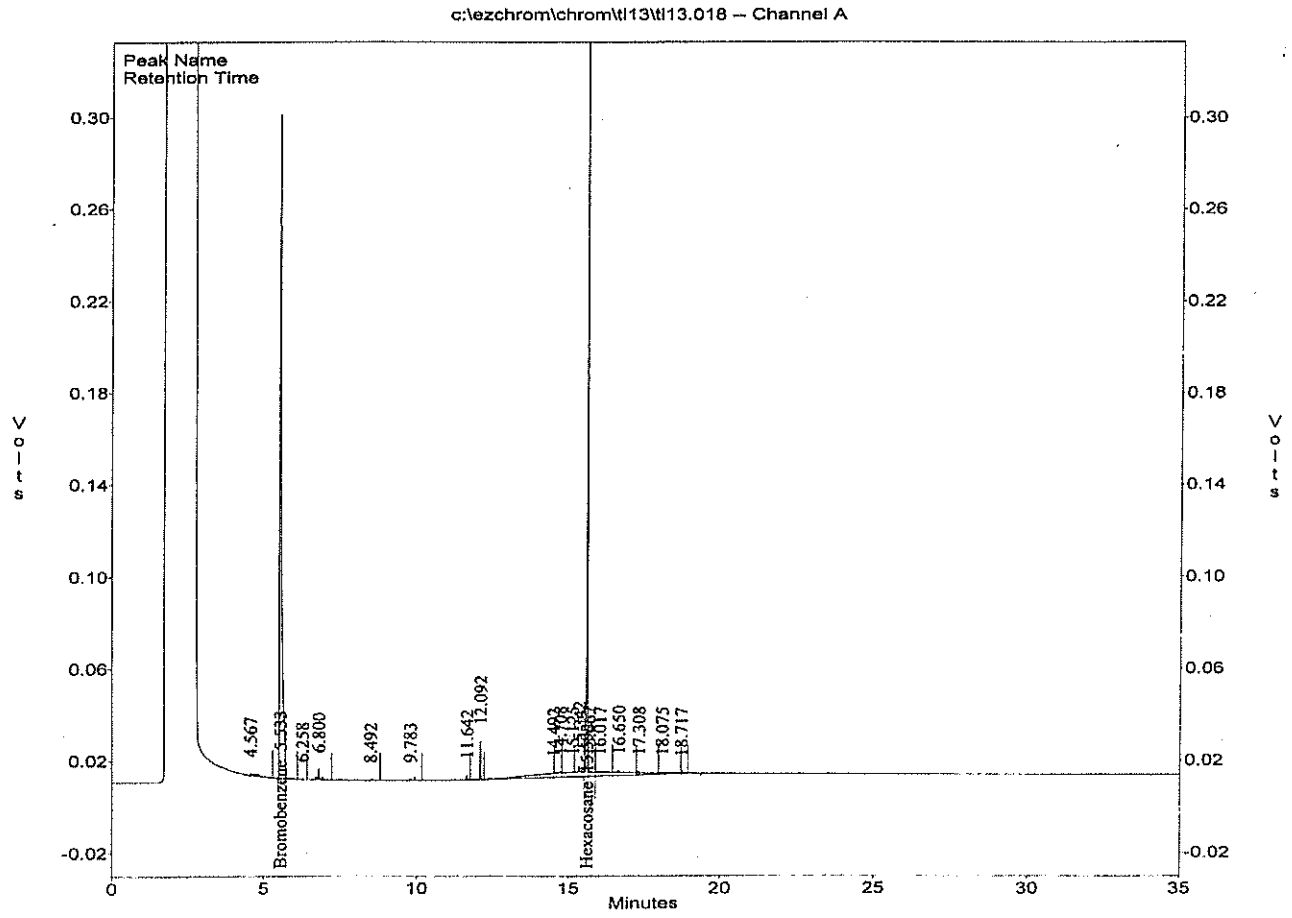
			Spike	QC Limit	QC Limit
SURR	: Hexacosane	Water	0.25 mg/L	63-165%	54-176%
		Soil	25 mg/kg	65-135%	60-160%

METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ti13\ti13.018
Method : c:\ezchrom\methods\ds50i01.met
Sample ID : 05I049-03
Acquired : Sep 14, 2005 00:27:54
Printed : Sep 15, 2005 15:25:36
User : JANE

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	5.533	1157241	13141.1	88.1
13	Hexacosane	15.592	780049	28776.7	27.1
G1	Diesel(TOTAL)		484183	23931.3	20.2
G2	Diesel(C10-C24)		197935	23756.5	8.3
G3	Diesel(C10-C28)		410630	23793.6	17.3



5007

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: SES-TECH	Date Collected:	09/07/05
Project	: CAMP PENDLETON, UST SITE 1106	Date Received:	09/08/05
Batch No.	: 051049	Date Extracted:	09/12/05 13:30
Sample ID:	0003-64	Date Analyzed:	09/14/05 02:33
Lab Samp ID:	1049-04	Dilution Factor:	.97
Lab File ID:	TI13021A	Matrix :	WATER
Ext Btch ID:	DSI013W	% Moisture :	NA
Calib. Ref.:	TI13014A	Instrument ID :	GCT050

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
DIESEL	.15	.097	.024

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
HEXACOSANE	105	65-135

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24

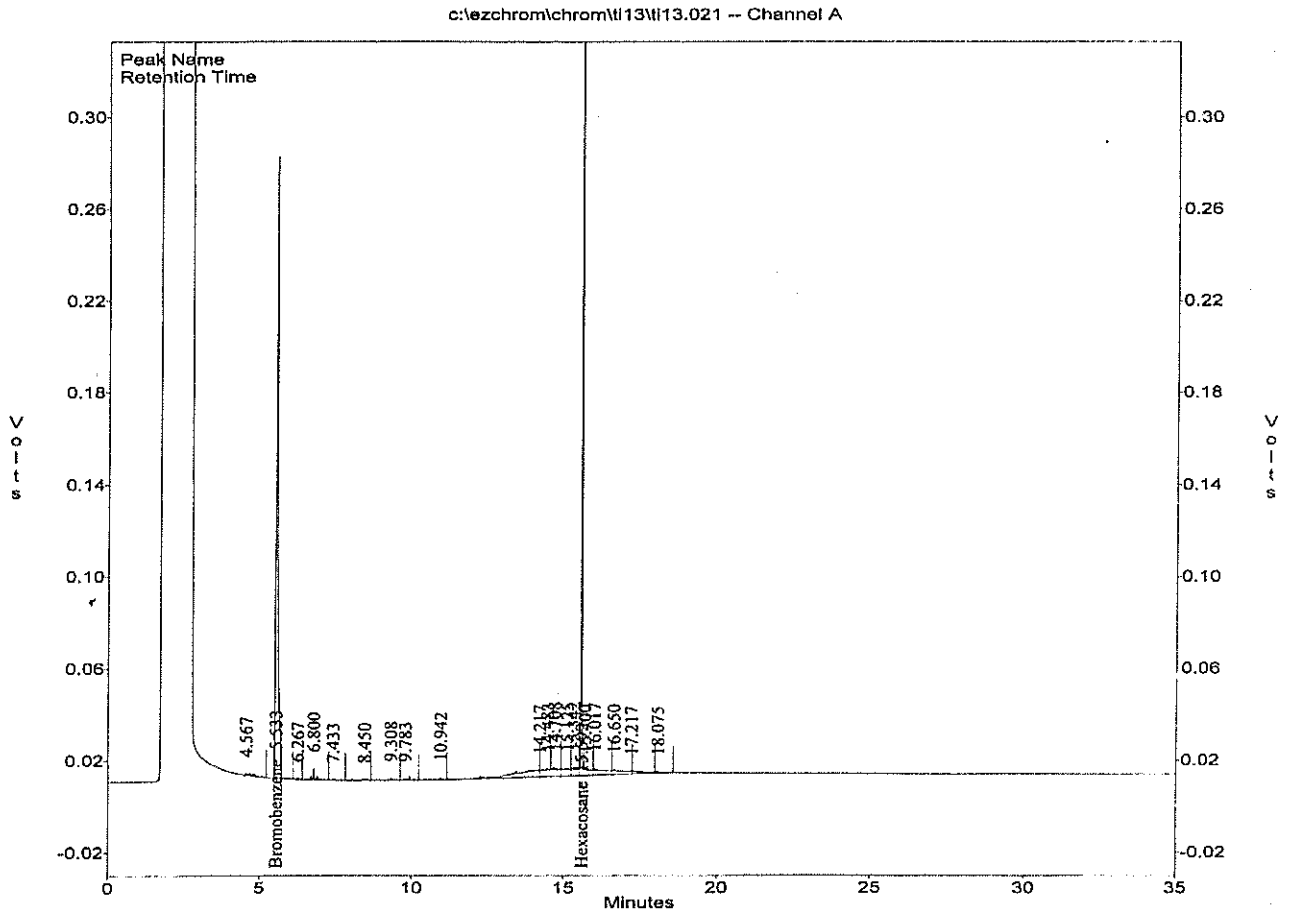
			Spike	QC Limit	QC Limit
SURR	: Hexacosane	Water	0.25 mg/L	63-165%	54-176%
		Soil	25 mg/kg	65-135%	60-160%

METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ti13\ti13.021
Method : c:\ezchrom\methods\ds50i01.met
Sample ID : 05I049-04
Acquired : Sep 14, 2005 02:33:44
Printed : Sep 15, 2005 15:27:07
User : JANE

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	5.533	1077491	13141.1	82.0
15	Hexacosane	15.592	757277	28776.7	26.3
G1	Diesel(TOTAL)		655644	23931.3	27.4
G2	Diesel(C10-C24)		370674	23756.5	15.6
G3	Diesel(C10-C28)		599494	23793.6	25.2



5009
9/15/05

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: SES-TECH	Date Collected:	09/07/05
Project	: CAMP PENDLETON, UST SITE 1106	Date Received:	09/08/05
Batch No.	: 051049	Date Extracted:	09/12/05 13:30
Sample ID:	0003-65	Date Analyzed:	09/14/05 03:15
Lab Samp ID:	1049-05	Dilution Factor:	.95
Lab File ID:	TI13022A	Matrix	: WATER
Ext Btch ID:	DSI013W	% Moisture	: NA
Calib. Ref.:	TI13014A	Instrument ID	: GCT050

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
DIESEL	.15	.095	.024

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
HEXACOSANE	103	65-135

RL : Reporting Limit

Parameter	H-C Range
Diesel	C10-C24

			Spike	QC Limit	QC Limit
SURR	: Hexacosane	Water	0.25 mg/L	63-165%	54-176%
		Soil	25 mg/kg	65-135%	60-160%

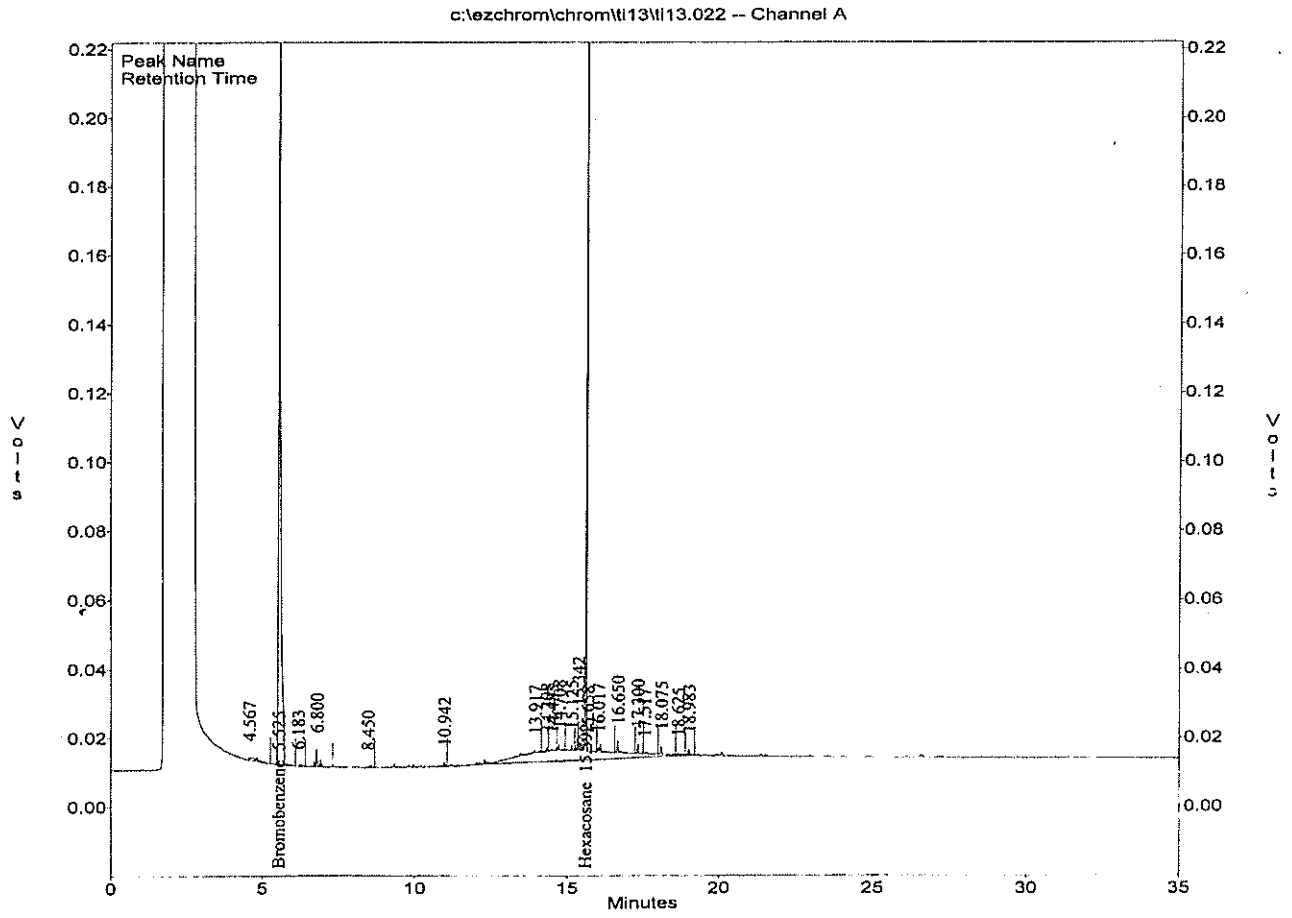
5010

METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ti13\ti13.022
Method : c:\ezchrom\methods\ds50i01.met
Sample ID : 05I049-05
Acquired : Sep 14, 2005 03:15:38
Printed : Sep 15, 2005 15:28:24
User : JANE

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	5.525	1023440	13141.1	77.9
13	Hexacosane	15.592	739414	28776.7	25.7
G1	Diesel(TOTAL)		747446	23931.3	31.2
G2	Diesel(C10-C24)		364457	23756.5	15.3
G3	Diesel(C10-C28)		638836	23793.6	26.8



5011
9/15/05

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: SES-TECH	Date Collected:	09/07/05
Project	: CAMP PENDLETON, UST SITE 1106	Date Received:	09/08/05
Batch No.	: 051049	Date Extracted:	09/12/05 13:30
Sample ID:	0003-66	Date Analyzed:	09/14/05 03:57
Lab Samp ID:	1049-06	Dilution Factor:	.94
Lab File ID:	TI13023A	Matrix	: WATER
Ext Btch ID:	DSI013W	% Moisture	: NA
Calib. Ref.:	TI13014A	Instrument ID	: GCT050

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
DIESEL	.15	.094	.024

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
HEXACOSANE	108	65-135

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24

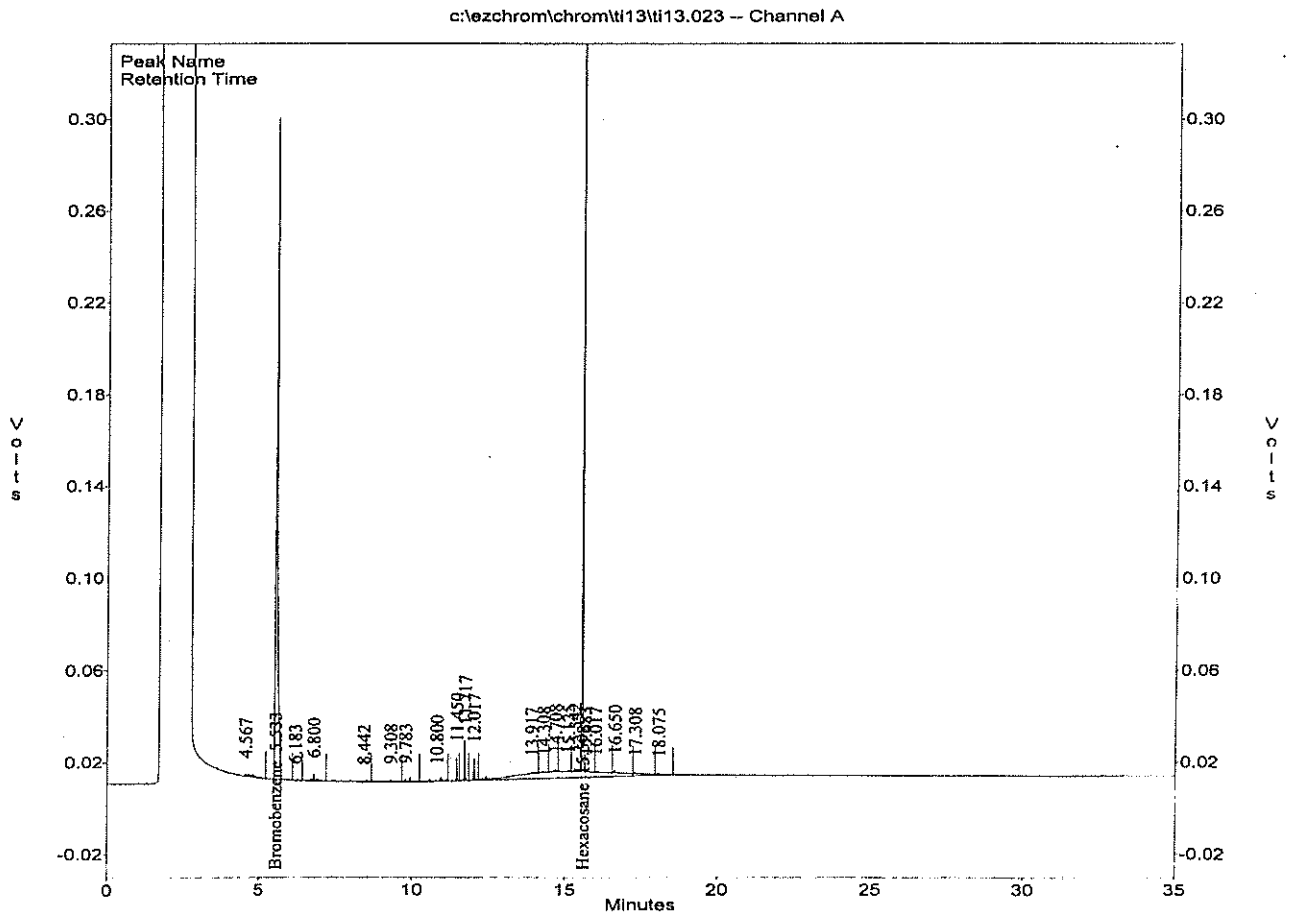
			Spike	QC Limit	QC Limit
SURR	: Hexacosane	Water	0.25 mg/L	63-165%	54-176%
		Soil	25 mg/kg	65-135%	60-160%

METHOD 8015 by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ti13\ti13.023
Method : c:\ezchrom\methods\ds50i01.met
Sample ID : 05I049-06
Acquired : Sep 14, 2005 03:57:31
Printed : Sep 15, 2005 15:29:08
User : JANE

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppm)
2	Bromobenzene	5.533	1128464	13141.1	85.9
17	Hexacosane	15.592	779280	28776.7	27.1
G1	Diesel(TOTAL)		693929	23931.3	29.0
G2	Diesel(C10-C24)		380994	23756.5	16.0
G3	Diesel(C10-C28)		632452	23793.6	26.6



5013
9-15-05

QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : SES-TECH	Date Collected: NA
Project : CAMP PENDLETON, UST SITE 1106	Date Received: 09/12/05
Batch No. : 051049	Date Extracted: 09/12/05 13:30
Sample ID: MBLK1W	Date Analyzed: 09/13/05 14:40
Lab Samp ID: DSI013WB	Dilution Factor: 1
Lab File ID: TI13004A	Matrix : WATER
Ext Btch ID: DSI013W	% Moisture : NA
Calib. Ref.: TI13002A	Instrument ID : GCT050

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
DIESEL	ND	.1	.025

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
HEXACOSANE	102	65-135

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24

			Spike	QC Limit	QC Limit
SURR : Hexacosane		Water	0.25 mg/L	63-165%	54-176%
		Soil	25 mg/kg	65-135%	60-160%

5015

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SES-TECH
PROJECT: CAMP PENDLETON, UST SITE 1106
BATCH NO.: 051049
METHOD: METHOD 3520C/8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSI013WB	DSI013WL	DSI013WC		
LAB FILE ID:	TI13004A	TI13005A	TI13006A		
DATE EXTRACTED:	09/12/0513:30	09/12/0513:30	09/12/0513:30	DATE COLLECTED:	NA
DATE ANALYZED:	09/13/0514:40	09/13/0515:22	09/13/0516:04	DATE RECEIVED:	09/12/05
PREP. BATCH:	DSI013W	DSI013W	DSI013W		
CALIB. REF:	TI13002A	TI13002A	TI13002A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5	5.27	105	5	5.14	103	3	65-135	30

SURROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
Hexacosane	.25	.258	103	.25	.259	104	65-135

5016

EMA LABORATORIES

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: SES-TECH
PROJECT: CAMP PENDLETON, UST SITE 1106
BATCH NO.: 051049
METHOD: METHOD 3520C/8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	.99	.99	.96		
SAMPLE ID:	0003-63				
LAB SAMP ID:	I049-03	I049-03M	I049-03S		
LAB FILE ID:	TI13018A	TI13019A	TI13020A		
DATE EXTRACTED:	09/12/0513:30	09/12/0513:30	09/12/0513:30	DATE COLLECTED:	09/07/05
DATE ANALYZED:	09/14/0500:27	09/14/0501:09	09/14/0501:51	DATE RECEIVED:	09/08/05
PREP. BATCH:	DSI013W	DSI013W	DSI013W		
CALIB. REF:	TI13014A	TI13014A	TI13014A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	4.95	4.98	101	4.8	4.83	101	0	65-135	30

SURROGATE PARAMETER	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	QC LIMIT (%)
Hexacosane	.247	.269	109	.24	.264	110	65-135

5017